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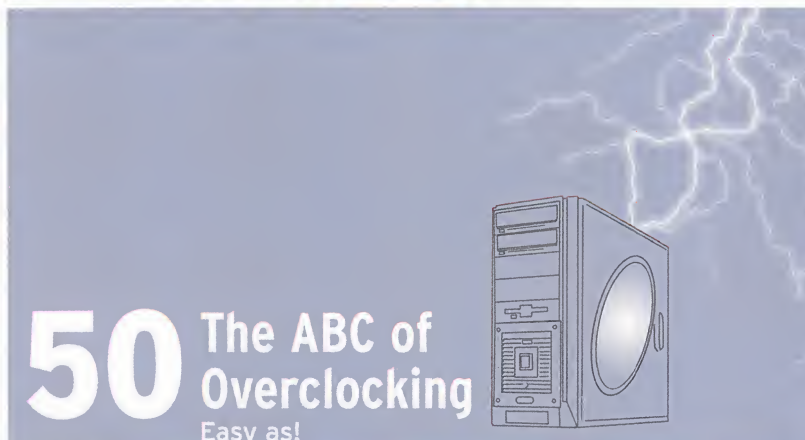
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SimCity 4 images courtesy of Electronic Arts





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6 PCPP

# GUNS OR BUTTER



We spoil you sometimes. Last month it was Max Payne 2; this month it's Battlefield: Vietnam and Medal of Honor: Pacific Assault. Huge previews of three of the biggest games

of this year and next, all in just two issues. You're spoilt, you really are. Unless you don't like guns, that is. Sorry about that.

Maybe you like getting your hands dirty inside your PC instead. In that case, turn quickly to the PowerTest from page 82 where Bennett puts thirteen Pentium 4 motherboards through their thoroughly benchmarked paces. Or our tutorial on overclocking from page 50, if you've just purchased the PCPP Beast from Altech and feel it's not quite as insanely fast as you'd like. Or our videocard showdown from page 46, where Anthony discovers which of NVIDIA and ATI's latest chipsets offers the superior performance.

Then there's the 2003 edition of our annual Top 100 list. Ah, the Top 100... what a great excuse to sit down and get drunk while arguing about games. (Not that we need an excuse, to be

honest.) This year's list sees plenty of movement in the upper echelons, reflecting not merely the different make-up of the PCPP crew twelve months on, but also the high quality of many recent releases. The final choice for top spot inevitably proved somewhat controversial amongst the team, but ultimately we felt confident with the decision based upon the results of PCPP#87's Game of the Year readers poll. Nonetheless, I'm sure it will still be the cause of many an argument in the forums.

Keen-eyed readers may have spied the slight change to the masthead this month, specifically those three extra words - games, hardware, technology. At heart, PCPP is a gamer's magazine, not just a games magazine. We know you're interested in buying the right hardware components to play your games. And we also know you're interested in reading about the latest developments in the technology used to power and build games. Our new motto hopefully better reflects PCPP's philosophy and yours too.

Enjoy the issue...

David Wildgoose,  
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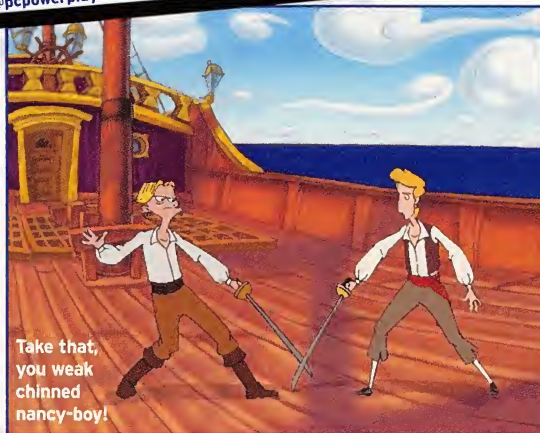
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# INBOX

## PUZZLES GALORE

My friend recently gave me The Curse of Monkey Island. Its humour and laugh inducing cartoony graphics made me realise the state of games being released now. Try-hard, violent and unenjoyable games like New World Order suck compared to the classics. Instead of releasing RPGs like Knights of The Old Republic and MMOGs like Star Wars Galaxies, why doesn't LucasArts make another great game with humour and colourful graphics filled with puzzles galore like Monkey Island and rekindle the long lost love?

James Ritchie



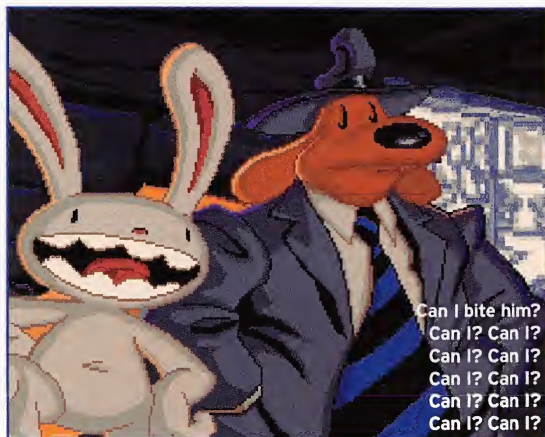
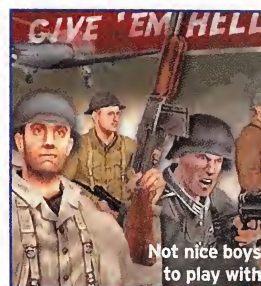
Good news, James. Long-awaited sequels to Full Throttle and Sam & Max are in development at LucasArts right now. Fingers crossed the love's still there.

## FAST DOWNHILL SLIDE

I believe games are taking a turn for the worse. Cheating is prevalent, exploits are found on a monthly if not weekly basis and the general feel of online gaming is diving. One cannot enter a server without being accused of something or other. Gone are the days of "nice frag" or "good game". I think a shining example of this is your GOTY, Battlefield 1942. This game has so many issues, it's just not funny. From an administrative point of view, the game is down right ugly! It is not administrator friendly at all - not by a long shot. The simple act of banning a disruptive or cheating player is made impossible due to a

non-existent ban system (some people may consider IP banning a ban system, but believe me, it's not). I have contacted both EA and DICE many times and only received lame automated replies. Half-Life and Tribes 2 have some of the best admin functionality you will find. I personally believe that the Tribes 2 admin system is second to none and Half-Life certainly has the best dedicated server support. Regardless of inherent problems that Half-Life and HL-based mods have with regard to using an old engine, the developers continue to actively support and improve the game. They address as many issues as possible from bugs and exploits to cheats. Despite the success of Half-Life and the mods, developers continue to follow their 'Release and Reap' strategy without learning from the success of developers such as Valve Software.

Conor O'Flaherty





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## TOTAL IDIOT

I know I'll sound like a total idiot, but after reading your magazine I came across the words RTS and FPS. Can you please tell me what they stand for?

Ian Gilbert

Certainly, Ian. Real Time Strategy (e.g. Warcraft 3) and First Person Shooter (e.g. Unreal 2).

## VERY EMPTY

Here is my problem. I've been looking for a good MMORPG to play and I'm having trouble deciding which one. There are so many out there to choose from and in the future plenty more to play. I've been playing the trial of Asheron's Call 2 and like it a lot, but will it be around in a year's time? The servers seem very empty. I would appreciate your views on the current state of the genre and where you think it is going? Maybe you could do a section dedicated to the genre as a whole or something similar. Any advice would be really helpful.

Ryan Norris

We're planning a special issue focused solely on online gaming, including a hefty section on MMORPGs. More news on this soon.



## THEIR CORRECT SLOTS

Well, I took the plunge. I upgraded my old ASUS P4B motherboard with 640MB SDRAM. I am now sporting the new ASUS P4C800 Deluxe motherboard with my Intel Pentium 2.4GHz Socket 478 533FSB CPU. I also have two sticks of Elixer PC2700 256MB DDR-RAM running dual channel (same coloured slots) and one stick of

Look at me!  
I got a new motherboard!

Corsair 512MB XMS PC3500 DDR-RAM. I will be buying another stick of the 512MB Corsair DDR-RAM to replace the two Elixer 256MB sticks, so I will only have the two Corsair sticks in place. Or should I have two Elixer and two Corsair in their correct slots all running at once - Dual Channel x 2? I ran a benchmark on 3DMark 2001 SE with patch and scored 12,500. I will eventually get the 3.0GHz Pentium 4 with HyperThreading and 800FSB. This should provide some interesting results.

Rodney Mayhew

Thanks for the update. Stay tuned for next month's episode where Rodney installs a new cooling system!

## INSTEAD OF NURTURING

Do you think with the upcoming release of various games such as Half-Life 2 and Quake 4, that modders will recreate mods like Day of Defeat on these new graphics engines? I noticed Day Of Defeat (the retail version) on the shelf at my local Harvey Norman and wondered why so many great mods for all kinds of games have not been picked up by companies like EA and Valve. A good example of this is the Desert Combat Mod for BF1942. It looks great, plays great, but instead of nurturing it, EA has tried to compete with it by announcing the BF1942: Secret Weapons of WW2. Developers should look at the talent in the public modding arena instead of coming up with stupid sequels.

Brandt Cers

Hopefully, the new engines you mention will allow modders to implement more sophisticated designs

instead of rehashing past glories. But we won't get our hopes up just yet.

## CROWD OF PIGEONS

It seems now that people just play two things - FPS and RTS. The ever dwindling reviews in your mag consist of Quake clones mostly about war and WarCraft rip-offs, online or otherwise. These days I am lucky if I read more than one decent review in a month. I must say that the WarCraft series has been good mainly because of Blizzard's fantastic ability to create a story. The only first person shooter I've played and enjoyed is Golden Eye on N64 and I have no desire to play anymore. So standing on my soap box with a crowd of pigeons at my feet, I say, lay down our virtual guns and rise up above that temptation of gaming clones. Let us create a world where our imaginations run wild in the streets of 0s and 1s, and where all gamers are created equal.

Adam Hocknell

While we generally agree with your point about genre constriction, a quick perusal of our Top 100 reveals plenty of imaginative and original titles. The top four titles, in particular, all combine and reinvent existing genres in novel and enjoyable ways. And, of course, there's always Vangers!



A world where all gamers are created equal!

FROM THE FORUMS  
Outcast and Developers

Post subject:

Outcast-opinions?

Posted: Fri Jun 20, 2003

9:56 am

I recently got 'Outcast'.

Not Jedi Outcast, Outcast.

Have you played it? Did you enjoy it?

I've got nothing against it, except I don't know frig about the plot, and the controls are stupid. Ice Raider, Tiefling

of the game.

Stebby, Cacodeemon

Post subject: Which

developer can't you stand?

Posted: Tue Jun 17, 2003

9:22 am

For me it is easily Raven. I hate these chumps. Their games are dull, dull, dull and yet they constantly get great licences to work with, time and time again. Do they use these licences to full effect? Well, it depends on what your definition. Do they successfully use the licences to sell what is otherwise dreck, then yes, I guess they do. If, however, you mean do they use licences in such a fashion as to bring out the potential in game to form a base for interactive entertainment, then they certainly do not!

EIPresidente, 007 & 1/2

3D Realms. Why won't they admit that Duke Nukem Forever isn't coming!?! the-frag-man, Crate

Running With Scissors. Just for being morons and giving gamers a bad name. eltharion\_doa, MIB

EA for buying out OSI. They ruined Ultima Online and turned it into Care Bear world. They killed Lord British, I tell you! Damn them. Gasman, Tiefling

Legend Entertainment - for promising so much, yet delivering so little. Cruggaroth, Tiefling

No plot? Did you miss out the cool movie at the start?

Anyway, I thought it was a great game, and the first sci-fi RPG I've ever encountered that gave so much freedom. It also had some great ideas with the sub-quests (most of which led to the natives of Outcast doing something to slow down and weaken their enslavers/your enemies, and so making it worthwhile to complete as many sub-quests as is possible) which I haven't seen used today.

Mortal\_Wound, MIB

Outcast is an excellent game... though definitely not for everyone. The whole world just sucked me in and had me enjoying every minute of it. So many memorable moments: being pursued through the streets of Talanzaar by a group of those elite soldiers, desperately finding my way to the daoka while bullets ring past my head and exploding all around me. And who can forget the Gorgor? When I first saw that thing I think I zort myself. As for the voxel graphics, I think that just added to the charm



Heeeyyy!  
I'm the Fonz!

## OR THE PUBLISHERS

Like every other computer magazine on earth you include a Need specification and a Want specification for games. I know this sounds silly, but what does that mean? Are these your suggestions, the developers or the publishers? If it is your suggestion, when you say 'need', does that mean this system will run the game

only if the settings are all set to a low resolution with a framerate that has the same number as you have limbs?

Daniel Kinna

What we print is our recommendation of what you *need* to run the game in a playable condition (so take it for granted that this isn't at the optimal resolution and framerate) and what you would *want* in order to experience the game to its fullest.



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# Insight



The G5.  
Best thing  
since sliced  
bread?



## A ROTTEN APPLE

The fastest desktop computer. Yeah right

Bennett Ring

Apple rock hard. The new Power Mac G5 is easily the fastest desktop computer in the world, and is also the world's first 64-bit personal computer. Thanks to its 64-bit support, the G5 can handle up to 8GB of DDR400 memory, and its new PCI-X interface for PCI cards promises to speed up performance even more. It's over twice the speed of a 3GHz Pentium 4, and almost twice as fast as a dual Xeon system. So, now really is the time to sell your PC and enter the mactastical land of Apple - you won't regret it. Oh yeah, if you believe this bollocks, you probably also believe Santa is slaving away in his workshop right now, the Easter Bunny is the CEO of Cadbury, and Elvis is currently residing in a sub-orbital UFO.

It seems that every time Apple releases a new personal computer, it's the world's fastest. Who can forget that old chestnut, "As fast as a supercomputer"? This time around, it appears Apple has severely fudged the benchmarks to make grand claims about the performance of the G5.

The most obvious of these untruths is the SPEC2000 results, a hardcore benchmark of CPU performance that Apple used to illustrate its superiority over every other desktop processor. You can head over to the website [www.spec.org/cpu2000/results/res2003\\_q2/](http://www.spec.org/cpu2000/results/res2003_q2/) to see a complete list of SPEC benchmark results, as submitted by the manufacturers of the different CPUs. Strangely absent are any G5 results.

Pay close attention to the results for the Dell Precision 650 machine (based on the Intel Xeon CPU) - it has an integer score of 1089 and a floating point score of 1053. Which is bloody fast. However, according to Apple's 'independent' benchmark results, the same Precision only scored 836 and 646 respectively - which just happens to be easily beaten by the G5's scores of 800 and 840.

It appears that Apple's 'independent' tester, VeriTest, used the least optimal configuration for the Precision, and as a result it lost up to 60% of its officially validated performance. On the other

hand, the G5 was tweaked to the wazoo. Apple hasn't even submitted its SPEC results to be posted on the SPEC website, which suggests the G5 used questionable benchmarking techniques that won't stand up to the scrutiny necessary for them to be posted on the site. Even standard validated Pentium 4 3GHz systems show up to a 50% increase over the SPEC scores that Apple claim.

Many of the other benchmarks are also as trustworthy as a car salesman with a gambling addiction. Why did Apple compare the G5's FireWire

performance with USB 2.0 performance on a P4? Don't they realise that IEEE 1394 is now a common feature on Intel motherboards? Of course they do, but they wouldn't have won the benchmark had it been an apples to apples comparison. Nyuk nyuk.

Of course, none of this is going to matter to the Macheads, who will still believe the G5 is the greatest thing since sliced bread. Thankfully, PC users are a little more sceptical about what to believe, and will recognise these laughable G5 benchmarks for what they really are - pure marketing manure.

Even standard validated Pentium 4 3GHz systems show up to a 50% increase over the SPEC scores that Apple claim.

All style and no  
substance?  
You decide





# TOUCHDOWN ON TATOOINE

## Star Wars Galaxies launches... but not in Australia

David Wildgoose

On June 26, LucasArts and Sony Online launched Star Wars Galaxies: An Empire Divided, the long-awaited massively multiplayer online only game set in the world's most popular sci-fi universe. The initial retail release is restricted to North America, but keen Australian Jedi-wannabes can import copies to play on US servers, assuming your Internet connection can cope.

Of course, it won't be cheap, with a basic monthly fee of \$US15 required to play. However, according to LucasArts president, Simon Jeffrey, "The current subscription plan for Star Wars Galaxies is reflective of the game's high quality and competitive with the current marketplace." There are cheaper plans, depending on the length of time you sign up for, with the 12-month plan costing only \$US12 per month.

With pre-order interest high and with over 500,000 registered members at the game's official forum, LucasArts prepared 20 servers to cope with expected demand. Couple that with the recent

exhaustive testing process and Galaxies should manage to launch relatively trouble-free, at least compared to most other MMOGs. Nevertheless, Sony Online is ramping up its development team to handle bug-fixing and balancing issues post-release.

"We're taking our best shot at balancing in beta," said a SOE spokesperson, "But we have had enough experience with MMOGs to know that the first couple of months of a live product is vastly different from a beta product."

Reports out of the beta phase indicate that Galaxies is far from 'Everquest in space' as some cynics had labelled it. Although there are plenty of randomly generated quests for players to undertake, the emphasis is very much on creating a world where players can role-play and do their own thing. Whether this perhaps idealistic ambition can remain intact outside the cosy confines of a beta test is debatable, but we hope the rewards of a

genuine player-driven society will be enough to keep undesirable elements in check.

Electronic Arts is looking to bring Star Wars Galaxies to Australia, including a local server, but at this stage no firm release date has been set.



The initial retail release is restricted to North America, but keen Australian Jedi-wannabes can still import copies to play on US servers, assuming your connection can cope

# HE TOLD US HE'D BE BACK

## Who wants to be a Terminator? Oh, all of us

Bennett Ring

Finding a gamer who doesn't like the Terminator films is about as easy as finding a banker who doesn't like money. You won't. Which is why we're rather stoked that Atari has announced Terminator 3: War of the Machines, heading to the PC in late 2003. Start sending those letters to the SkyNet Santa now, kiddies...

WotM is yet another firstperson shooter, so it's going to be up against some stiff competition at the end of this year, facing off against the likes of Doom 3 and Half-Life 2. The game ties in with the upcoming film, basing the levels in scenes that we'll see in the movie. In the singleplayer mode, you'll be playing the

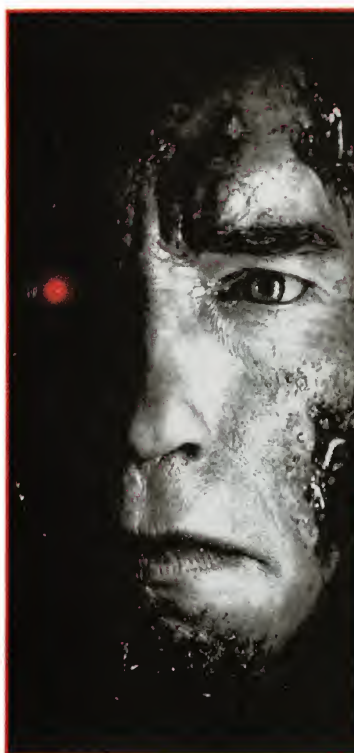
part of Arnie's T101, who has been kind enough to lend his voice talents to the game. It's great to see actors of Arnie's status getting involved in games - maybe now, Sarah Michelle Gellar will get off her high horse and get involved with Buffy 2.

While the singleplayer aspect sounds pretty cool, the feature that has us most excited is the multiplayer mode. There will be two teams you can play on, the human rebels or the evil SkyNet, and each side will have eight different classes. The SkyNet team looks the coolest by far, with the ability to control the various killing machines that make up SkyNet's arsenal. A highlight has to

be the flying HunterKillers, which featured in the futuristic battle scenes of the first two Terminator flicks.

A firstperson shooter released without vehicles won't cut it these days, so it's no surprise to see WotM will have vehicles in both the single and multiplayer modes. We can already imagine hooning around in a ute with a big assed gun on the back, getting chased by HunterKillers and various other cybernetic death dealers. Très cool.

We're not sure what engine the game is going to be using, but as we get more details on this promising title you can be sure we'll tell you all about it.





# SUN GETS GAME

## Java coming out to play

Timothy C. Best

Sun Microsystems, best known for high-end graphics workstations, is making a bold move into the consumer market and to accommodate such plans has created a new division: The Game Technology Group.

Its purpose: to make the tools and fine tune Java into a language game developers hanker after.

Java is already used extensively on the Web, coded into simple games and on mobile phones because it works on any enabled system including Windows, Linux and Macs. The Game Technology Group hopes to bring this cross-platform magic to high-end games, especially when it comes to the online arena.

If it all works properly, porting costs would be a thing of the past. No longer would you have to limit your audience to one platform or put on a second team for Xbox or PS2 development, which in the games business is a powerful lure.

Sun's new chief gaming officer, Chris Melissinos, says there is no reason Java won't run as quickly as

C++ when it comes to powering games and the perception that it can't handle high-end games is not true. This is a fair judgement when you can see the untapped potential of Java in work such as Agency 9's MegaCorps and PowerLane, Mind Control and Flying Guns.

The Game Technology Group is also working to bring mobile devices like phones under the same development framework, so access to persistent online worlds can eventually be carried around in a player's pocket.

Sun's claims might seem far fetched, but the PC-to-mobile technology is in line (and in competition) with Microsoft's .net, and while cross-compatibility could probably be done in C++, it doesn't have a champion with a new gaming group to implement it. If Sun pulls out some decent tools and libraries - and if it can crank Java games up to OS-optimised C++ speeds - eager developers will be lining up for hot Java in no time.



Sun Microsystems Conference: Kyoichiro Kouri displays a java-enabled phone

# RADEON 9100 IPG

## Integrated/mobile graphics start to suck a little less

Bennett Ring

Compared to our beloved desktop PCs, laptops are more like lametops when it comes to gaming. They just can't keep up, but it's not due to slow CPUs, sluggish memory bandwidth or woeful motherboard chipsets; you can blame it all on the craptastical video chipsets that laptops have had to make do with. While we've seen major improvements in these sloth-like mobile video chipsets over the last couple of years, ATI is now

promising to give mobile (and integrated) users an even tastier performance boost, as well as spiffier graphics, with the new RADEON 9100 chipset.

The new RS300 chip is at the centre of the RADEON 9100, which is available in two flavours; the standard RADEON 9100 IPG, designed as an integrated graphics solution for desktop PCs, and the MOBILITY RADEON 9100 IPG, which will be squeezed into notebooks and laptops.

There are two reasons why users of notebooks and laptops should take note of this new chipset. The first and most obvious is the improved performance, with initial benchmarks suggesting that the RADEON 9100 performs around the same speed as a GeForce 3. Sure, it's not likely to have you shelving your new 9700 PRO or 5900 Ultra, but it appears to be faster than every other mobile or integrated solution that is currently available.

The other feature, which has a large impact on the number of games that you'll be able to play on your integrated/mobile solution, is full support for DirectX 8.1's pixel shaders. This should allow for some of the pretty effects that are

There is still a massive difference between cutting edge desktop and integrated graphics but the 9100 lessens the gap

becoming commonplace in today's games, although we have doubts about whether these games will run very well at GeForce 3 performance levels. It doesn't appear to be a truly DirectX 8.1 compatible component though, as it lacks vertex shaders. We're guessing that vertex shaders will be run in a software mode, powered by the CPU, much like budget video cards such as the Xabre. Hopefully, this won't cause any compatibility problems with DirectX 8.1 titles.

There is still a massive difference between cutting edge desktop and integrated/mobile graphics solutions, but the 9100's implementation of pixel shaders goes some way to lessen this gap. Stay tuned for a PC PowerPlay performance evaluation soon.



### BAND WIDENING

A recent report by the Australian Competition and Consumer Commission (ACCC) has revealed that broadband subscription has grown by over 100% in the past year. Figures taken at the end of March this year indicated the number of broadband connections across the country was edging closer to the half-million mark. Significantly, DSL services grew by more than 200% accounting for around half of all broadband connections.



# DEATH TO THE CHEATING SCUM

## Aussie gaming ISP has a vaccine against online cheaters

Bennett Ring

So many cheaters, so few bullets. As firm believers in the concept that cheaters should be treated as criminals (they are, after all, defacing the work of others in a way that can be commercially devastating), we were more than happy to hear of Gaming ISP OzForces' latest initiative to rid its servers of these dregs of society.

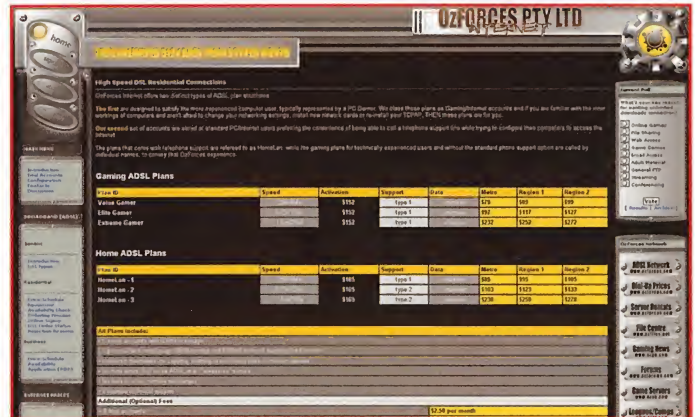
OzForces has implemented a system called Tarantula, which sadly it doesn't involve the application of giant, hairy, eight-legged monstrosities to the underpants of Counter-Strike wall hack 'tards. Basically, it's a database that is maintained by a select group of Standard Admins and Game Ops, containing reports from players of incidents where blatant cheating took place. Kind of like a gaming Gestapo, except it's not so sinister. If a player is found guilty of cheating, the player is banned from all OzForces servers.

If you happen to be an OzForces account holder and found guilty of this most heinous offence, then the brown stuff really hits the fan. You'll first be served with a temporary account ban and, if you keep up the crap, will eventually have your account terminated. With extreme prejudice. According to Christopher Meder, CEO of OzForces, "...This will send out a strong message to everyone in all gaming genres from FPS to RPG that OzForces, both as a business and a community, will not tolerate flagrant cheating, no matter what effect this has to our bottom line." It's great to see OzForces is going to such lengths, even risking its profits, to ensure a cheat-free gaming service.

Another initiative that ties in with the Tarantula system is the Server Admins Karma Priority System, or SAKPS for short. This allows players to vote on other players to select who will become game admins. It's a more

democratic approach than the usual method of admins being selected from a small group of guys who happen to be friends with those who run the servers. It should also result in more

admins being in the servers, thus helping to stamp out the bane of cheating. Wouldn't it be nice if all ISPs placed such an emphasis on creating a cheat-free, democratic gaming space?



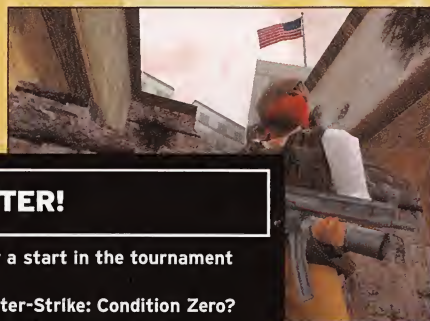
**SIGN UP: Join the forces at Oz now!**

# COUNTER-STRIKE COMPETITION

## PCPP and Vivendi to host Condition Zero tournament

So you think you're an elite Counter-Strike player, do you? Well, read on for your chance to play the upcoming Condition Zero and win some really very cool prizes.

In mid-August, PC PowerPlay and Vivendi Universal Games will be hosting a LAN event to celebrate the release of Counter-Strike: Condition Zero. The tournament is open to all PCPP readers (see How to Enter boxout) and will be held at Net Gamer on Glebe Point Rd, Sydney. We're looking for 16 players to participate. You don't need to have any CS experience (though it might help!); you only need to be able to be in Sydney on the yet-to-be-confirmed date. Each tournament participant will receive a free subscription to PC PowerPlay, plus a copy of Counter-Strike: Condition Zero courtesy of VUG. The winner will receive an extra special surprise. Get practicing!



### HOW TO ENTER!

All you need to do to be in the running for a start in the tournament is to answer the following question:

**Q. Why do you want to win a copy of Counter-Strike: Condition Zero?**  
Entries can be submitted via email to davidw@next.com.au with Condition Zero Comp in the subject line or posted to PCPP at the usual address. Entries close Friday, August 16 and the successful candidates will be contacted on Monday, August 19. The competition will be held later that week, so keep your diaries free!

**Note:** All entrants will have to make their own way to the event. Food and drink will be provided. Entry is by invitation only.







**MONOBROWSER:** Bill Gates absorbing the world, yesterday

### A DIVINE RIFT

Larian Studios, developer of Divine Divinity, has announced its next two projects. The first, due for release later this year, is a party-based RPG set in the same world as Divine Divinity and will

be titled Riftrunner. The second game is a fully-fledged sequel to DD that continues the epic story of the first game. Unlike Riftrunner, the sequel will sport a completely new game engine.

## WILD DIVINE

### Gaming gets touchy feely

Timothy C. Best

The Journey to the Wild Divine takes the notion of high-concepts to a new level. It uses a sensor placed on the fingertips to measure your heart rate, the time difference between each beat, as well as a player's sweat gland activity by way of a technology used in lie detectors. By looking at a player's bio-response, the game can tell whether you are agitated or relaxed - frustrated or getting it done.

To navigate the game, players have to learn to control their bodily responses, and alter their emotional states. In one section of the game, players have to lower a feather by lowering their heart rate and chilling out. Sometimes, the harder you try the worse your results. In other areas, players will need to rapidly raise and then lower their energy levels.

Not only do you have to play the game, but you have to feel your way through it.

If you scope out the website, you'll notice Wild Divine aims at being much more than a gimmicky game, it wants to be all-things spiritual and teach you about your inner self, methods to control your emotional state and how to balance your energy. It also has a world music soundtrack and fantastic scenery.

This shouldn't just be a game; it should be your driver's licence test. Imagine how much safer the roads would be with potential road ragers able to mentally direct their anger to a happier place instead of going insane?

Even though the combination of the technical and the spiritual in Wild Divine is interesting, the applications of this level of bio-feedback can creep across all game designs. For example, imagine playing AvP, System Shock or Doom 3 and the game judge pacing you by your emotional state. It's doesn't all have to be new age hippy stuff.

### DOOM-SPAWN

Splash Damage, the developer of the Enemy Territory add-on for Return to Castle Wolfenstein, is clearly very cosy with Carmack and co. The London-based studio has recently advertised for a programmer to join their team to work on a project based on the Doom 3 engine.

Nice work, if you can get it.

# WINDOWS ABSORBS IE

## No more standing alone

Timothy C. Best

Microsoft has recently announced that if you don't have it built into Windows then you can't have Internet Explorer 6 Service Pack 1, the last stand-alone iteration.

Cynics argued the move is directly related to the anti-trust ruling that said the software giant wasn't allowed to contractually force computer makers to use only their supporting applications like media players or web browsers. However, Microsoft has already denied this assertion by issuing a statement that in order to further develop the design of Internet Explorer it required changes at an operating system level and hinted at the possibility that the move was also a part of planned security enhancements for future generations of Windows. Microsoft is so intent on integration that it is also halting development on Macintosh IE beyond the odd security update.

Apparently, Mac users would be better served using the upcoming Apple Safari browser and as Microsoft doesn't have the access to the Mac

OS, it is forced to make IE competitive. It should be noted that a final version of Safari is yet to be released (at the time of writing) and that 95% of Mac users use IE.

Microsoft covers the business aspect very well and this may point to the company hiding something up its sleeve. On the one hand, it will make sure that future versions of Windows have all the tools they need for easy online maintenance. On the other, it will send conspiracy nuts wild as Windows security gets more chatty with home base.

Beyond that, how can it not be monopolistic to optimise your OS for your browser? Sure, it's no longer a product on its own, but it's bound to connect to optimised consumer services. Also, while the move will cement IE's place on Windows machines it will be at the cost of Mac users. This could force greater non-IE compatibility to become the order of the day for websites that don't get to be as picky with their clientele, which can only be a good thing... except for Microsoft.

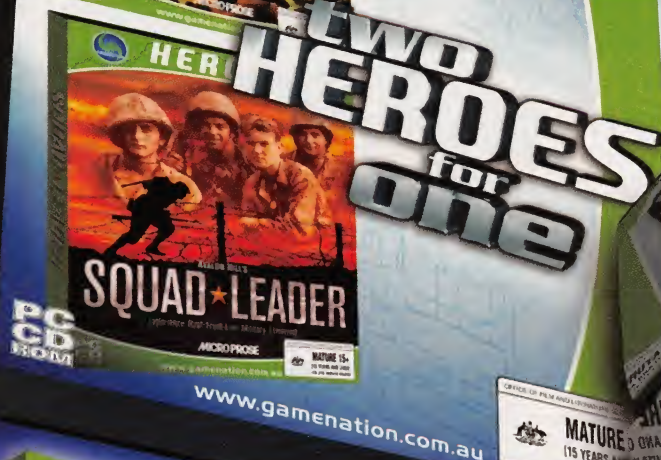


**NEW AGE:** A hippy playing Doom





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# MOD FOR MONEY

## Epic and NVIDIA team up for an Unreal competition

David Wildgoose

Hands up if you'd like to licence the Unreal Tournament engine for free and have the opportunity to release a commercial game based on that engine? Well, that's precisely what Epic, NVIDIA and a host of other sponsors, including Atari, AMD and Alias|Wavefront, are offering, thanks to a promotion called the \$1,000,000 NVIDIA Make Something Unreal competition.

Budding developers can take the latest iteration of the Unreal engine, as seen in UT2003 (or, indeed, UT 2004), and design an original and eye-catching mod. The categories are wide and varied, ranging from the obvious Best FPS mod all the way to Best Machinima, Best Vehicle or Best Use of Karma Physics. The competition is divided into three phases with cash prizes awarded in all categories at the end of each phase. The overall winner, to be announced early next year, will receive \$US50,000 plus a licence

worth \$US350,000 to use the Unreal engine in a commercial game.

Besides providing a short-term boost in sales for UT2003, the motivation for both Epic and Atari is clear. "This contest is not just about creating the best mod for Unreal Tournament 2003. It is intended to tap the talents of a wide audience of aspiring game developers and artists," says Mark Rein, vice president at Epic Games. "We hope that the contest will act as a catalyst for those talented individuals who might not have tried their hand in the game arena before, but want to get in and have the appropriate skills to create amazing mods for UT2003 and UT2004."

So, if you fancy yourself as a game developer - or just want to impress Epic (and maybe score a gig there) - we'd encourage you to give it a bash. Who knows, maybe some of the PCPP crew will be competing for the same prize?



### 3D EYE PATCHES

After the farcical non-announcement of Sid Meier's Pirates remake at this year's E3, we now have something resembling a detail about the project. No screenshots yet, but the new game will utilise NDL's Gamebryo engine, thus confirming the transition to realtime 3D. You may recall the NetImmerse iteration of NDL's technology used in the likes of Freedom Force and Morrowind.



HACK AND SLASH: A player-killer's dream in Shadow Bane

## BAD, BAD APPLES

### Hacked Shadow Bane gets wrathful

Timothy C. Best

When a group of players hacked into the controls of the massively multiplayer game, Shadow Bane, they got a little more creative than your average code gremlins.

It all started when players noticed they were missing some money, then tales started circulating of strange events. As the evening wore on, events took a kooky turn. An entire town was zapped to the bottom of the ocean where all hands were lost. Powerful and hostile guard units appeared in the Newbie-safe zones, players were transported around the globe and Saturday-Night-Special monsters started spawning like upstream salmon.

Player Killing hit new heights and some poor noobs were bound to once-safe but now infested cities, which meant they were re-born right in the middle of monsters again and again.

Player reaction ranged from annoyance to laughter. That night, Ubi Soft and the game's developer, Wolfpack

Studios, issued a statement claiming there had been a "serious attack", although no user details were compromised. It seems the individuals involved took advantage of administrator commands that were left in the client software after beta testing and bumped themselves up to God-status to make merry with several game servers. Where most hackers give players unfair advantage by granting items or stats, this came out of left field.

Once the developers realised what was happening, they quickly shut down the affected servers and started hitting the logs.

When the servers went back up, Wolfpack had magically rolled back time to bring characters back to life and restore any damage done - as if it had all been a bad dream.

Although any cyber crime that makes developers' lives a misery is hardly a commendable act, you have to give some marks for originality.

### THE INDIE SCENE

As we went to print, the Independent Games Festival has declared submissions open for this year's competition. An initiative of the US Game Developers Conference, the

festival seeks to promote the often eclectic work of small development teams. Entries close in November, with the awards ceremony held at next year's GDC in March.



# LET THE ADVENTURE BEGIN

## Dreamcatcher singlehandedly revives a once-forgotten genre

David Wildgoose



**GEORGE:** Appealing to female gamers, apparently

What the hell happened to adventure games? In the early days of PC gaming, it was the hippest genre, thanks to pioneering text-based titles such as *Colossal Cave*, *Zork* and graphic adventures like *King's Quest* and *The Hobbit*. LucasArts then rose to prominence on the back of the witty, puzzle-driven tales of *Zak McKracken*, *Indiana Jones* and the *Monkey Island* series. Believe it or not, adventures were once king.

With the advent of 3D graphics, things changed. Adventure games were crowded out of the market by fast-paced shooters, while we got our narrative kicks through RPGs and the new action adventure amalgams. However, Dreamcatcher, a US publisher and developer, has been a lone shining light throughout these dark ages, maintaining a catalogue of releases steeped in adventure tradition.

"The market has changed, but for the better," says Tara Reed, Dreamcatcher's PR co-ordinator. "Adventure gamers have become more sophisticated in their tastes and are

demanding more out of the genre. They won't just accept a simple game... they demand intense storylines, better graphics, improved AI and a strong cast of characters."

To meet this challenge head-on, Dreamcatcher recently formed The Adventure Company, a division

dedicated solely to furthering the eponymous genre. Games such as the award-winning *Syberia* and the recent *Post Mortem* indicate a bright future for both the new company and the genre as a whole. They also point towards a new market, with Dreamcatcher's own research finding more than 50% of adventure gamers are female. Strong female characters, such as *Syberia*'s Kate Walker, and gameplay that encourages thoughtful rather than violent solutions have thus become core components of The Adventure Company's design ethos.

Looking towards the future, Reed is optimistic about the direction the genre is heading in. "Games have become more about great graphics than great gameplay... but a lucky few combine both," she says. "Over the next couple of years we believe you're going to see some major developments including more 3D games, more character control and more environment interaction."

One of the studio's upcoming titles, and coincidentally the subject of our

current developer diary (see page 20), is *Broken Sword: The Sleeping Dragon*, from veteran UK codeshop Revolution Software. The game is played in full 3D and uses advanced realtime 3D rendering technology, while Revolution's proprietary Virtual Actor engine enables characters to have convincing facial animation and realistic body language. It also offers an intuitive direct control interface, with keyboard and mouse navigation for full control of the main characters, George and Nicole.

While the third in the *Broken Sword* series has been picked up for release in Australia by THQ, the future of other Adventure Company titles (such as *Mysterious Journey 2: Chameleon*, *Darkfall* and *Jack the Ripper*) in this country remains cloudy. Although Dreamcatcher doesn't have a distribution deal set up in Australia, Reed pledges they are working on it. Any interested parties should check out [www.adventurecompanygames.com](http://www.adventurecompanygames.com) for more information, as well as many a tale of real adventure.

### NEVERENDING-QUEST

In a Sims-esque move, Everquest is set to receive yet another expansion pack to further your adventures in Norrath. As the title, *Lost Dungeons of Norrath*, suggests, the theme is all about bashing your way through the cavernous depths. Hundreds of quests will be featured throughout over 40 dungeons that will apparently customize themselves based on party experience. Stay tuned for more EQ news next issue...



**KATE:** Appealing to (fe)male gamers, too

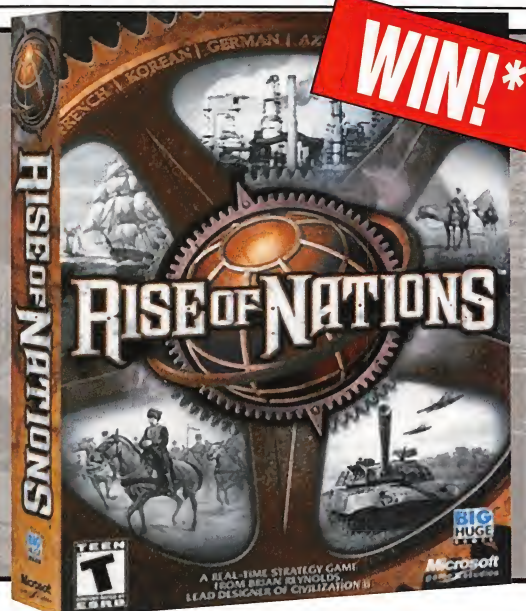


## 6 COPIES OF RISE OF NATIONS

Thanks to Microsoft, we have six copies of the new empire-builder, Rise of Nations, to give away. Designed by Brian Reynolds, creator of Alpha Centauri, it's been described as Civilization in realtime, a trite summary that's tough to disagree with. Unless you're being pedantic. To win, answer this question on the back of an envelope:

**Q. Which nation rises the highest?**

Rise of Nations Comp  
PC PowerPlay  
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THE BORINGLY NAMED

# COMPETITION PAGE!

MAYBE WIN!  
OR MAYBE NOT!

## 6 COPIES OF DEVASTATION

Thanks to Manacomm, we have six copies of the recent firstperson shooter, Devastation, to give away. A solid shooter, the B-grade stylings of its ludicrous post-apocalyptic scenario prove sufficiently diverting to compel you to play through to the end. And it's fun in multiplayer, too. To win, answer this question on the back of an envelope:

**Q. What happens after the inevitable apocalypse?**

Devastation Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016



YOU HAVE AN AVERAGE  
TO SLIM CHANCE OF  
WINNING THIS!

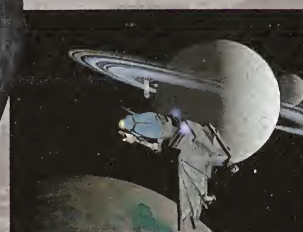


## 6 COPIES OF FREELANCER

Thanks to Microsoft, we have six copies of Digital Anvil's epic space opera, Freelancer, to give away. Unfairly maligned as Diablo-in-space, Chris Roberts' opus is a frequently enjoyable excursion into intergalactic trading, buccaneering and bar crawling. And it's also fun in multiplayer, too. To win, answer this question on the back of an envelope:

**Q. What would be a space trader's most valuable commodity?**

Freelancer Comp  
PC PowerPlay  
78 Renwick St  
Redfern NSW 2016



\*Possibly.





# TREME DDR

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# DEVELOPER DIARY

## BROKEN SWORD: THE SLEEPING DRAGON ENTRY: #3

**I** have real sympathy for Shigeru Miyamoto. When *The Legend of Zelda: The Wind Waker* was revealed, the Great Man was attacked from many quarters for having shifted to a look that was markedly different to its previous incarnations. It was a bold decision; but this progression in visual style was bound to provoke a reaction - both good and bad - from many loyal fans.

Of course, Miyamoto was vindicated; *Zelda* is a triumph of style and substance, demonstrating that with creativity and a commitment to evolution, spectacular results can be achieved from propelling forward an original and imaginative visual style.

In a more low-key way, we too were criticised by some gamers for changing the look of the *Broken*

Sword world and the

characters that, over time, they had come to know so well. Moreover, like *Zelda*, I'm convinced that anyone concerned about the shift to 3D will welcome the change in graphic style once they see the game running.

Much of this month has been spent tweaking the visual style of the locations and characters, which has certainly come a long way since we first started the pre-production stage over a year ago. The first two *Broken Sword* games were often praised for their cartoon-quality visuals. Back then, we had deliberately aimed for a Disney-style, which was way ahead of its time and for *The Sleeping Dragon*, we decided to keep the same look. We had even used cartoon rendering algorithms for our early test screens in order to emulate the look that made *Broken Sword* successful.

However, the resulting look did not match our

expectations for *The Sleeping Dragon*, as the 'flat' look - now dubbed 2.5D - delivered a style that lacked the visual depth needed for character definition and shape. Indeed, one of the primary benefits of 3D was being squandered, and this was hardly the revolutionary leap we wanted: so it was back to the drawing board - literally.

Our criteria for the style were simple but ambitious. We wanted the visuals to look believable but not necessarily realistic. In particular, we had no interest in photo realism. While certain genres, particularly simulations, understandably aim to be as visually realistic as possible, we, however, have the opportunity to push the style beyond realism. A great point of reference was Japanese anime. Akira blew me away when I had first seen it - a rich, amazing story. More recently, the excellent *Princess Mononoke* points to a graphic style that is so full; These two examples are very much aspirations for *Revolution* as they show what can be done by escaping from the confines of reality.

To achieve our objectives, it was clear we would need custom technology. We wanted rich colours with sophisticated shadowing to create believable visual contrast. In particular, we wanted to escape the flat/repeat texture look of so many 3D games. To do this, the technology and the art teams worked closely to develop an innovative variation of dual-pass texturing technology whereby the first pass applied the flat textures, while the second applied a detailed light-map. Textures were hand drawn to achieve the 'cartoon' look, while the light-map employed 'radiosity' to create very realistic lighting.

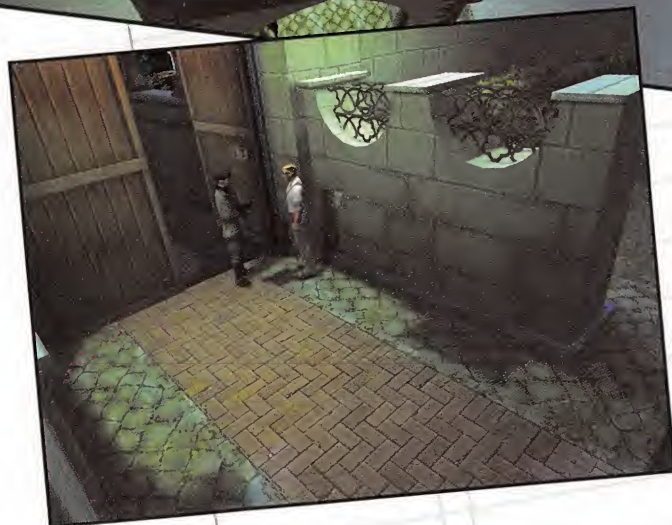
Current games that use dual-pass texturing generate light-maps off-line using ray-tracing - a technique in which a light ray (or photon) is fired, in a backward direction, from the eye towards the scene and, ultimately, the light source. The rays are tested against all the objects in the scene and the appropriate pixel is set to the colour values determined by how the specific ray has been affected. Ray tracing algorithms are well understood and easy to

implement. The technique, however, is prone to aliasing, and does not account for bounce lighting.

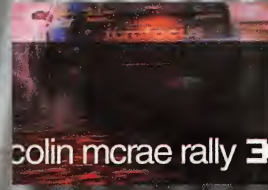
Radiosity is a more advanced rendering technique that performs a complex analysis of light reflections off diffuse surfaces. This, specially, allows for light bouncing from one surface onto another and results in subtle shadows and hues. So, for example, a strong light can bounce off a yellow wooden floor and that light will then be carried around the room subtly affecting the walls and ceiling.

So, the technological requirement was achieved through the development of a sophisticated light-mapping system that renders the light-map offline using radiosity techniques and then applies it in real time. This gives us the opportunity, for example, to get the vivid dapple where the light comes through a tree's leaves and harsh shadows in corners that are not affected by a light source. This technique is very much a first and it has also freed up the opportunity to use 24-bit colour. Combine radiosity with this increase in colour depth and the result really is stunning. And, of course, we continue to implement the content, particularly the backgrounds, animation and dialogue. The critical path of the project makes it necessary to lock the dialogue fairly soon, so it can be recorded and translated into multiple languages - but that cannot be done until the logic is fully implemented and the backgrounds completed to the extent situations and descriptions can be precisely written. I hope to update you on this next time. So until then, Best,

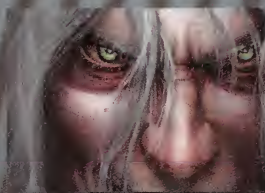
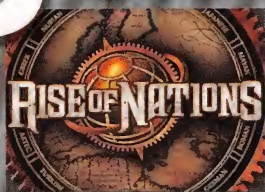
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# HOTWARE

All the bits that we cram in at the last moment with **Anthony Fordham**

## SAMSUNG SYNCMASTER 152X

Price: \$749 Distributor: Samsung Contact: [samsung.com.au](http://samsung.com.au)

We like Samsung LCD monitors, we do, because they have thin little bezels, funky silver finish, groovy stands that actually work, can be wall mounted and most of them can even work in portrait mode, which we never use but like having the option anyway.

Unfortunately, a lot of Samsung's larger LCDs only have a 25ms response time, which can make some faster-paced games a bit blurry. The 152X, on the other hand, has a swifty 17ms response time, making it difficult to distinguish between this and a CRT.

Sure, it's only a 15" monitor but it gives as much viewable area as an average 17" CRT and you save a lot of desk space.



## SIGMA SD9 DIGITAL SLR

Price: \$3999 Distributor: CRKennedy Contact: [crkennedy.com.au](http://crkennedy.com.au)

The problem with most digital cameras is that they're basically overpriced point-and-shoot tourist cams with limited features, fixed focuses and worse. But most digital single lens reflex (SLR) cameras cost upwards of \$15,000.

Enter the SD9, the first in a new generation of 'affordable' digital SLRs. Sure, you're still paying what you'd pay for a beefy PC, but this thing takes seriously amazing pics. It has a 10.7 megapixel sensor using the newer X3 technology, where each pixel can detect all colours, instead of each alternating pixel taking care of its own colour.

Results are pretty amazing, allowing you to print out A3 photos full of rich, vibrant colour and other such marketing speak. Of course, the SD9 weighs about as much as the brick it somewhat resembles - this is about power, not packaging.



## X-MICRO USB BLUETOOTH DONGLE

Price: \$85 Distributor: Altech Contact: [altech.com.au](http://altech.com.au)

Here's a fun and useful little tool. Don't faff about with complicated Bluetooth adaptors for your PC, just slip one of these in the old USB port and Bluetooth away with your mobile, laptop, PDA or other so-enabled device.

Setup for this device is a little bit fiddly, requiring the installation of a few drivers and a bunch of software, which then needs to be configured using unfamiliar Bluetooth type expressions, such as OBEX File Transfer. And Windows XP will insist there is a Bluetooth network cable unplugged, which is unusual to say the least for a wireless protocol.

Once it's all up and running though, things couldn't be smoother. A My Bluetooth Places desktop icon will appear and then it's mp3 transferring and image uploading aplenty. Bluetooth truly is magic.



## ROBOMOWER RL800

Price: \$US699 Distributor: Amazon Contact: [amazon.com](http://amazon.com)

From the It Came From the Internet Files, this yellow monstrosity is a robotic lawn mower designed to make your life easier and your arse larger as you just sit around sucking down high-caffeine carbonated beverages while dumb machines do the yard work.

Stake out your lawn with a wire perimeter. Unleash the RL800 on your hapless grass. It's triple blade system is considered by some to be EVEN MORE

POWERFUL than an average dodgy two-stroke Victa. It mulches automatically. It runs for hours on a rechargeable battery and is estimated to cost about \$15 a year in electricity. In other words, it's all things to all men.

Sure, it's expensive and it has trouble negotiating small obstacles like grazing pet rabbits (or rather, doesn't have ENOUGH trouble, if you know what I mean) but hey, it's a robot lawn mower. You want to live a crazy life.





# HITI THERMAL PHOTOPRINTER

**Price:** \$399 **Distributor:** Gadgets **Contact:** gadgets.com.au

Okay, picture this. You're at a LAN. You have a groovy little digital camera, you're taking snaps of all your buddies beating various clowns at a variety of top titles. Everyone agrees the pics are totally awesome and they all want a copy. What do you do? Go down the photo lab? Or print them out immediately on your HiTi photoprinter?

This dye sublimation printer uses a cartridge containing bands of ink that are forced into the photo paper by a heated printing head. Once all four colours - cyan, magenta, yellow and black - are applied, a protective coat is rolled over the image allowing the photograph to be handled immediately.

It's the portability of this printer, and its ability to print from any USB enabled camera that makes it perfect for LANs and other events where a small amount of desk space and a power point are available.



# SONY MINI MICRO VAULT 256MB

**Price:** \$399 **Distributor:** Sony **Contact:** sony.com

Thumb drives, bum drives, all kinds of flash memory enabled drives are on the market now, so it's not surprise to see the big boys finally jumping on board. Sony's Mini Micro Vault is a little bit more expensive than your average 256MB thumb drive, but it does support USB 2.0 for a 5.5MB/s transfer rate, which is certainly healthy.

Sony has also realised the value of the 'driverless' device, so this little beauty is natively recognised as another hard drive under Windows - couldn't be simpler.

It also comes with a rather cumbersome-looking docking station, although if your PC is on the floor and you want thumb drive action on your desk it could be just the thing.



# SONY-ERICSSON T610

**Price:** \$749 **Distributor:** Organiser World **Contact:** ow.com.au

There are a lot of mobile phones on the market these days with a lot of features including built in cameras and java support, which seems to do little other than play games so far.

The Sony-Ericsson T610 does all you'd expect, plus it has two other things PC enthusiasts love - all aluminium construction and a shiny piano-style black finish on the top.

It's like the phone has been dipped in rich dark chocolate and offered to techno fetishists as a tasty treat.

It also has the requisite 65,536 colour screen and 32 voice polyphonic ringtones, so you can irritate the bejeesus out of your fellow commuters. And it's slim, trim and easy on the eye.



# ACCENT HTPC DESKTOP CASE

**Price:** \$399 **Distributor:** Gadgets **Contact:** gadgets.com.au

The thing to do is put together a cheap machine as an all-in-one home theatre system for playing DVDs, MP3s, even the occasional bootleg DivX film, although Animatrix is available on DVD these days.

The only problem is that most tower cases look damn ugly in the living room. Enter Accent. Its HTPC desktop case is designed to look at home in a TV cabinet, with brushed aluminium finish, hi-fi style front LCD and all ugly drives and whatnots hidden away behind aluminium panels.

It's available in a variety of colours, but black is probably going to be the

most popular, although we like the 70s retro chic of the silver. Inside there's room for a hard drive and a DVD drive, as well as one more 5.25" drive.



# CHIC MP30 128MB MP3 PLAYER

**Price:** \$299 **Distributor:** mStation **Contact:** mstation.com.au

The grillion or so 128MB flash MP3 players on the market at the moment are all much the same and it takes either whacky extras like laser pointers to lift them above the pack - or sheer style.

The Chic is aptly named indeed. This little package is slim, silver and has a blue backlight to give you that last year's Nokia feel. Unlike a lot of the slightly smaller players, it has a SD and MMC slot for expansion cards, giving you a maximum of 640MB of memory using today's available cards - not too shabby for \$300.

It includes a slim rechargeable battery instead of the clunky AAs a lot of players seem to favour, and has all the usual equaliser, voice recording and upload and download features you'd expect from this kind of product. Transfer is USB 1.0, which is little slow but you can't get everything right?





# THE WRIGHT STUFF

Timothy C Best



**I**t's fair to say I've made a few predictions in my time. The marriage between John Woo and gaming was a no-brainer, but even when you have the search lights on and pointing in the right direction there are still things you don't see coming.

Did you know that they've announced a Metallica game that is all about vehicle to vehicle combat? Convergence of media is one thing, but that's just weird on a whole lot of levels.

Another, and more important surprise, is the announcement that Fox Entertainment - you may know it from such shows as *The Simpsons* - has signed a first look agreement with Will Wright, the creator of *The Sims*, *SimCity* and *Sims Online*, to develop a TV series.

Out with the Sit-com and in with the Sim-com.

I met Will Wright once. He was like the inventor dad in Disney movies: smart, enthusiastic, friendly, open and with a touch of mad scientist. Hardly like your typical movie industry mover and shaker. But this shouldn't come as a surprise considering Wright got into computers all those years ago as a better way to control the robots he was working on.

Wright had always liked games and, at the time, computer models gave him something to play with. There was also the appealing mad scientist power and psychology of it all: these Sims let him observe players creating something new just by understanding the models he had made. And the rest, as they say, is history.

## Hollywood or Bust

He managed to make the hottest PC game of all time from the cloth of the everyday, which made even the most mundane-seeming actions and observations interesting. That's powerful stuff, just ask any Hemmingway fan.

It won't be Wright's first foray into the headspace of TV, either. Even before the deal, his Stupid Fun Club had already started work on two concepts. One is an exploration of suburban life set in feudal Japan told with a combination of stop-animated wooden puppets, CG and anime.

In this project, a little girl looks after a mechanical robot that the town blacksmith knocks up. The robot is an unemotional machine, but each character interprets the robot's actions differently. Warriors see warrior stoicism in the automaton, schemers see schemes behind the poker face and children see a child-like curiosity in the metal man. He's the blank slate on which others write their stories - kind of like *The Sims*. Each character and building represents some element of psychology and sociology, including gender-bending bandits and scientist/priests. Doesn't sound too mass market, now does it? Interestingly enough, the show was mainly written by Lew Morton who is best known for work on *The Simpsons* and *Futurama*.

The proposed project for Fox is a reality TV show, possibly called *M.Y. Robot*, where Wright has built a

robot with the idea of watching people interact and deal with it as it begs on the street or waits tables. It's part comedy, part psychology and all Wright.

Wright is a very interesting person to be the thin edge of the wedge, so to speak. Obviously he hasn't got a Fox-granted magic wand to make anything, nor do we assume he's working the casting couch, but so far, Fox hasn't been quiet in letting people know who it has signed on.

I wonder if Fox knows what it's in for. On paper, Wright looks like a top investment with a best selling PC game series to his credit and, in fact, with the rest of the Sim series under his belt, he has an impressive track record of hits that even the most hardbitten exec would find difficult to overlook. Then you have his collaboration for *M.Y.*



*Robot* that demonstrates a willingness to dive into non-interactive media.

Will Wright is also quite a fun guy to talk to; he doesn't fall into the dull category of assuming an unfathomable or aloof personality that other gaming types seem to think is in vogue. At a meeting, I found his enthusiasm and apparent knowledge strangely hypnotic.

Here's the odd thing. His games have always been toys with plenty to play with, but no plot; build a city, keep it going, or have some fun with sim versions of your life. These masterpieces never had to depend on a story.

Other than unproven projects like *M.Y. Robot*, we have no idea whether Wright is capable of creating characters, stringing concepts together or sweeping us up in an epic adventure. Why would Fox choose this guy?

Maybe it's Wright's approach to the world that makes him the most conducive game designer to leap across into TV. *The Sims* demonstrates Wright's understanding of and fascination with

people dynamics that has since translated well into an addictive game. Beyond that, he's also been hooking people with nothing more than the joy of creation and maintenance for *SimCity*.

Wright's an analyser, a tinker and a toy maker.

What are the stories of a toymaker? *M.Y. Robot* is an insight. Maybe that's just what Fox is looking for.

Optioning the tales of a designer of *Quake* or even something as sprawling as *Deus Ex* will give you an action series or a cross between the *West Wing* and *X-Files*. Wright will give you something else that might strike a chord, like the ungainly combination of blunt naivety, stupid humour and razor satire that powers *The Simpsons*. What has Fox got to lose?

The Network has said that it isn't looking for a show based on a game; it wants "new entertainment franchises".

Even if a Wright concept was made and then flopped, Fox will still gets cred for being hip and just ahead of its time. Furthermore, Wright is discussing about making a link with the audience and building in a feedback loop between the show and viewer that goes far beyond the current phone-in votes. Fox is reportedly looking for a neat gimmick to meet these requirements, which may be a system that is huge in both reach and complexity.

## Eccentric Orbits

Strangely, the idea of luminary game developers moving into television is far more reassuring than having the traffic move the other way. I think it has something to do with knowing great game developers have unique visions and the ability think around

corners. They have to envision the whirring gears inside everything they create.

They write in terms of paths, options and possibilities. Even though we don't usually get to explore those possibilities in linear storytelling, the fact we have come to expect it has oftentimes lead us somewhere off the beaten track.

Before my glowing appraisal of the talent of games writers blind you, I must admit that, yes, I have played plenty of games with lousy stories that look as if they took about as long as the art loading on the screens. I've also played *Black & White*, which is an abject lesson in the difficulties of narrative for a sim-game design genius.

Maybe the product of this strange union will be a tangle of half-expressed ideas and unfulfilled possibilities; but then again maybe it will be something new that will lure passive television into something more.

Does Will have the right stuff to pull it off? Well, I guess we'll find out by what will be wedged between episodes of *The Simpsons*.



OzForces [CLA] Alfred



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# WIRELESS AIN'T ALL THAT

Stuart Calvin



**W**hat do you think might be the slowest component of most computers, either PC or Mac? I've been pondering Wireless or 'WiFi' technology again. It's available right now, but is still not yet well understood in our country of early-adopters and there are too many furphies for my liking. The headlong bum rush into wireless network connectivity has me concerned. Of course, dialup communications is holding you back, if we ignore the old low-speed USB 1.0 standard of 188 Bytes per second and PS/2 for the moment. Maybe this doesn't surprise some readers but, yep, even at the theoretical max of 56,000 bits per second that's only 6.84KB/s. More likely at home or work, is a typically good 46Kbps connection with a high-end 42Kbps download at a tick over 5KB/s. Before anyone should worry about frames per second and CPU clock speed they should think about tapping into some ADSL DMT full-rate download potential of 8MB/s or bookoo rates for cable. But, not with current WiFi technology and notwithstanding the Turbo Mode technology being talked-up at the moment. For comparison, keep in mind, as you read along, that IEEE 1394 and USB 2.0 are fast at 50MB/s and 60MB/s. Keep in mind also that sustained ATA100 disc throughput at 50-60MB/s is fast.

## Your bill sir

Wireless equipment is simply a replacement for that ubiquitous blue or red CAT5 cable, as well as the cabled piece of kit itself. So, instead of a Netgear FR114P router/firewall/print server (\$299 RRP), you plug in an FM114P (\$499 RRP); instead of a DG814 integrated 4-port DSL modem with NAT Firewall and VPN passthrough protection with Web page content filtering and time-of-day usage management (RRP \$399), you hook up the HR314 (over a grand!); instead of a Netgear FA311 network interface card (\$39) you insert the HA311 (\$499 RRP). Need another access point? Throw in a Netgear HE102 (\$799 RRP). Want an ADSL modem and wireless access point with true Firewall business-class security? Hey, go chase down a DG824M (\$599 RRP)... eek! And I haven't even talked about the neighbour's power drill, attenuated fall-back and sarking. What's wrong with CAT5 cable? Do you really want to surf in the dunny, in the kitchen while cooking noodles or when you're sick in bed? You can still run Gigabit Ethernet over copper twisted pairs, and with 40% throughput at worst, you're still looking at over 51MB/s data transfer rates. I'm happy with 5-10MB/s over 100Mbps Ethernet at current cost. My case rests. So, what of communication between computers on a home network? What is "ten/one hundred" and how fast is it? Are communication speeds as fast as you think they are? Is Ethernet 10/100 up there with ATA100 disk speeds? How did I turn 100Mbps into 12.5MB/s? And is WiFi better or worse?

Here's what I think: if you rent or board or only surf the net, then fill your boots with WiFi (if you can afford it!). If, on the other hand, you want to actually run a home data (gaming) and communications (file sharing and printing) network - then forget WiFi for the time being. Spend what price difference there is between wireless equipment and cabled equipment on someone to wire your digs with twisted pairs and wall outlets. I reckon you could get an RJ45 socket and twin RJ11 sockets in every room with the savings. It's also very, very cool.

## Measuring for speed

Officially, the 802.11a and 802.11b WiFi standards each define a different physical layer. The 802.11b devices transmit at 2.4 Gigahertz and send data up to 11Mbps using Direct Sequence Spread Spectrum Modulation. The 802.11a devices transmit at 5GHz and send data up to 54Mbps using Orthogonal Frequency Division Multiplexing. The superior performance of 802.11a offers potential support for bandwidth hungry applications, but the higher operating frequency also equates to a relatively shorter range than 802.11b. Most people still buy the old 11b WiFi standard since the new 11a standard is much more expensive and for Internet surfing there is no gain by using higher bandwidth. The fastest residential ADSL Internet speed is a theoretical maximum 192KB/s with a 1.5 Megabit connection. It's only if we ever get to cable download speeds of 1.25 MB/s that our home 10Mbps WAN ports and 10Mbps Ethernet networks are in trouble. Plug a wireless device into a cable fed network and I ask, "What's the point?!" Note that old and new WiFi cannot talk to each other! Got a bit of both? Purchase a Netgear WAB102 with a dual 802.11a/b chipset (RRP \$749) for compatibility. The theoretical maximum speed of the new available 802.11g products is also 54Mbps. To be fair, a pure environment should deliver up to 24Mbps, some will deliver speeds only in the low 20Mbps area, while mixed 802.11b/g environments get between 9Mbps and 14Mbps throughput. In real-life, there's a lot of necessary overhead and redundancy on WiFi links - checking and resending data not properly received. So a WiFi connection won't be faster than a CAT5 network.

So how fast is a Megabit per second? It's at this point where bits and bytes are very important. The difference between video/data/voice communication Megabit throughput and storage/data transfer Megabytes is a factor of eight and it's not in the favour of Megabits. The WiFi 802.11b standard of 11Mb/s



is 1.31 Megabytes per second, dear reader. The 802.11g standard of 54Mbps works out at

6.75MB/s. And KNOW THIS: you can depend on only HALF that speed at the most.

PC enthusiasts generally know how fast or big a piece of kit is from its description, such as "10/100 Ethernet" or an "ATA100" hard disk; that would be 10Mbps or 100Mbps for the network and 100MB/s for the hard disk. Unfortunately, data communication Gigabits and storage Gigabytes are not the same as I've tried to point out. A Gigabyte of bits is way, way bigger than a Giga of bits. While 1GB/s is 1024MB/s and, therefore, a truckload of bits per second, the Ethernet Gigabit transmission speed of 1 Gigabit per second, for example, is actually 128MB/s and not even close to a Gigabyte per second (of course, anything over 40% of that throughput is luck). There are eight Gigabits in just one Gigabyte. Most of you should have picked up on this discrepancy by now because it's just too easy to compare apples with oranges or the kewl WiFi standard of 11Mbps being 'approximately'

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**Let me just say that if you live by the adage, "He who dies with the most toys, wins", then you should get ready for your toys to step all over each other.**

---

close to 11MB/s. This is the reason for all the numbers, bits and bytes littered thus far.

Interference between WiFi devices isn't yet discussed in any sort of interesting and relevant detail, however that's a story for another day. Let me just say that if you live by the adage, "He who dies with the most toys, wins", then get ready for your toys to step all over each other. For many home users, including gamers, 10Mbps is more than enough, most Internet links are far slower than that, so a faster home network won't speed up your browsing. But a faster home network will speed up access between computers on the local network and it's there you may notice the speed limitation of WiFi. For lower cost and little hassle you can get a stable speed, wired network.





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# NVIDIA, ATI - PLS STFU

## The Guerrilla Gamer



**O**kay, so I know some of my ideas are considered 'old fashioned' and 'backward' and even 'evidence of severe head trauma', but it is just me, or are the video card wars now entering a new age of abject gibbering stupidity?

I ask this because apparently, after all the casting into the outer darkness and the patching and gnashing of teeth, it turns out NVIDIA didn't cheat on 3DMark03 after all. Because building a benchmarking utility that just measures raw performance and doesn't allow for driver optimisations is no longer representative of...

Argh! Would you listen to me? I'm a seasoned, dedicated gamer, a guy who spent six years on Rogue trying (and failing) to be the only one to ever finish it, a guy who wept when my fledgling Sid-Meier's-Alpha-Centauri-A-Brian-Reynolds-Game secondary colony got space worms, and this whole 3DMark03 thing has turned me into a hardware nerd!

### The Ungamers

You know the type. They don't play games; they just reprogram games to measure how fast their computer runs. They actually get excited when UT2003 boots up, not because they're going to play it, but because it's going to prove once and for all that their rig is kick ARSE and the hideously complicated and expensive water cooler inside was WORTH it. That upgrading to 433MHz DDR RAM was WORTH it. That having a PC that glows in the dark and no girlfriend was WORTH it.

Once upon a time, all of us proper gamers could ignore all that rubbish and get on with actually playing a few games. That was until this wretched 3DMark thing came along. The first version was released in 2000 and everyone pretty much ignored it. Then 3DMark2001 started to pop up in our magazines from time to time, which was okay because it was interesting to be able to see a video card's performance measured by a series of standardised tests. But then people started comparing their results online, and all hell broke loose in the form of ungamers (like the undead) fighting for supremacy - in this case represented by a single four digit number higher than everyone else's.

The latest effort, 3DMark03, initially caused NVIDIA to get its diamond-studded knickers in a twist when its precious GeForceFX cards didn't perform well in the full suite of tests, apparently because of the way the company had chosen to implement pixel shader support in the new generation of chips.

### Who Gives A Mark03

NVIDIA, mate, who cares? Why the blistering belch do I need to know this rubbish? Will better anti-aliasing performance make the current crop of crap games any more appealing? Does 16X anisotropic filtering make Unreal 2 less puerile? What the hell does anisotropic mean anyway? I thought it was some kind of triangle invented by a Greek in his bath after the water sloshed over the



edge and he jumped out shouting, "Sovereign Hill!"

Anyway, NVIDIA managed to magically cure the problem with a new driver release, and everything seemed back to normal, until 3DMark03 developer Futuremark (who recently decided the name Futuremark was more benchmarky than its previous name, MadOnion) accused NVIDIA of building in specific cheats or 'optimisations' into the drivers in question. These optimisations or 'cheats' allowed the card to identify when it was running 3DMark03 and react accordingly, boosting performance.

Big deal, you might say. Yes indeed, agreed Futuremark with characteristic Finnish obliviousness to English sarcasm. But then something weird happened. Rather than NVIDIA being pilloried from pillar to post, tarred, feathered, ridden wet and put away hard, Futuremark released what US observers have called a 'pansy-ass' press release saying that Futuremark and NVIDIA are now best of friends and driver optimisations (cheats) are good because that's how real games are developed - viz the NVIDIA "The Way It's Meant To Be Played" propaganda initiative.

### A message to NVIDIA

Guys, guys, here's some shocking news. We gamers don't give a shit. You are pissing millions of marketing dollars against a wall of adulating tech freaks who represent about point six of a per cent of all gamers. No wonder kids are turning to console! You plug the damn thing in and away it goes. No one puts the guilts on you for owning an ATI video card. No one even expects you to know who ATI is.

But this issue of driver optimisations amuses me. Basically, according to NVIDIA, graphics card manufacturers are now supposed to work closely with developers to create unique driver features for their games. This is an almost direct reversal of the good old days where developers had to write drivers for as many of the most popular display adaptor types as they could think of (or find time for) to ensure their game ran on the broadest spectrum of machines. Rather than games



programming for cards, cards are now programming for games. But only the big games. The rest of you can get stuffed.

It therefore follows that half the next generation of Triple-A titles will be part of NVIDIA's 'The Way It's Meant To Be Played' program and the other half will be part of whatever it is ATI calls its driver optimisation scheme. All the while we're standing in the shop peering at even more logos and stickers and blazes cluttering up the covers of our games, screaming, "Ignore Those Bastards, This Is the Freaking Way It's Meant To Be Played, HELLO People We Have Greek Triangles!" It'll be so much about the video card manufacturer's marketing that you won't even be able to tell the game is just another Serious Sam clone until the wretched thing finally infects your computer and clogs your registry with outdated versions of Quicktime and Adobe Acrobat Reader (but that's another story).

### Driver it home!

What's my point? You sound like my Editor. My point is that I just want to play games, I don't want to have to take part in a corporate turf war fuelled by the one-upmanship of greasy geeks on the US West Coast. I don't want to have to lay awake in the small hours sweating about whether or not I might have just blown \$800 on a video card that doesn't support ImageSmoothXP2003 II technology and can't actually properly render a turtle staring slack-jawed at a freaking butterfly without resorting to driver cheats. Run 3DMark03 sometime, and you'll see what I mean.

*The Guerrilla Gamer is a sad, sad little weasel of a man who for some reason thinks it's cool to pretend not to know anything about computers. The fact that he owns six of them dating from the late 80s just so he can play a half-finished alpha port of Bolo or maybe Doom 2 with his strange friends over IPX doesn't seem to hold much water with him. But then again, holding water, or any kind of liquid, has never been one of his strengths*





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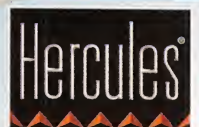
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**ISSUE #85:** The winner of our subscriptions prize from issue #85 is Francis Marino of Geelong, VIC! Francis takes home a beautiful, retro-style black 22" monitor from Mitsubishi. What an unreasonably lucky bastard!



A dramatic, high-contrast image of a war-torn seascape. In the foreground, the white, splashing bow of a ship cuts through dark, turbulent water. A red and white striped navigation buoy is visible in the mid-ground. In the background, a large, dark naval ship is partially visible, with a small aircraft flying above it. The sky is filled with smoke and fire, creating a sense of intense battle. The overall color palette is dominated by dark blues, greys, and fiery oranges and reds.

# EA'S BAND OF BROTHERS





Bennett Ring and Daniel Wilks go behind enemy lines to report on the biggest sequels of the year - Battlefield: Vietnam and Medal of Honor: Pacific Assault.

**W**ar is hell. Unless it's a computerised depiction of war, that is. In which case, it's a great way to kill several hundred people, blow up a few villages and maybe even slaughter a couple of friends without scoring yourself a one way ticket to a nice, quiet, padded cell in a high security ward that specialises in the neutering of psychopaths. Battlefield 1942 is without doubt the finest depiction of war currently available on the PC (why else would it take out the coveted number one spot in our Top 100?), offering massive battles of up to 64 players waged in huge, sprawling maps, with the unique ability to drive lots of different vehicles. Tanks, planes, ships - it's got 'em all. Cap this off with some silky smooth net code and one of the sexiest graphics engines out there, and there was no way this game could fail. As a result, it's rapidly becoming one of the most popular online first person shooters currently available, and looks set to be the modders engine of choice with a massive range of mods in development. We all know what happens when a game turns out to be this successful - sequelmania. PowerPlay was privileged enough to get an exclusive look at the follow up to BF1942, which looks set to rip the online FPS world a new one in Autumn, 2004 - Battlefield: Vietnam.

Why is it that every developer and his C++ coding dog is trekking along the Ho Chi Minh trail to gaming goodness? We've seen the recent release of Viet Cong and Line of Sight: Vietnam, and the highly anticipated Men of Valor: Vietnam is set to come out next year. According to Scott Evans, a senior producer at EA, it's not just because every other company is releasing Vietnam games that the next game in the Battlefield series is also based around shooting lots of short guys in black pyjamas. He explains, "All of the products released so far, and scheduled for release, have been going after the same thing - a singleplayer experience that puts you in Charlie Sheen's combat boots. We're not after that. It's not what Battlefield is about."

So, those of you who were hoping EA were going to beef up the singleplayer component with a story driven campaign will have to get your jollies elsewhere; there will still be a singleplayer mode included in the game, but the developers like to think of this as a training area. Which means it's probably going to be pretty crap, just like the original. However, as someone who has played BF1942 religiously since its release, and yet hasn't once played it in the singleplayer mode, I'm pretty sure that most Battlefield veterans couldn't give a damn about the lack of attention to singleplayer. ►





EA believes that Vietnam is the next logical step for the Battlefield series. Says Scott, "We think of Vietnam as a natural progression for the BF gameplay and franchise. The guns were different, the vehicles were different, the terrain was different, and most importantly, *people think of the war in a very different way than World War 2.*" Newer vehicles and higher firepower are one of the key reasons for moving to Vietnam instead of, say, the Korean conflict, which used very similar hardware to WW2. A key example of this is the workhorse of the Vietnam conflict, the ever reliable UH-1 Iroquois, affectionately known as the Huey. BF:V is going to include many variants of the UH-1, and you'll be able to pull off some cool new stuff with this chopper. Want to move a tank to the other side of a river without drowning the occupants? Simply hook up a tow line on your Huey and air drop it. With such a heavy reliance upon airlifting, it wouldn't be fair to the commies if SAMs (Surface to Air Missile) weren't included, so BF:V is also going to include every pilot's worst nightmare. These should mean guided missiles, as opposed to the unguided Stingers currently used in the Desert Combat mod. A series of vehicles that we can't wait to blow some villagers into tomorrow with are the various PBRs (Patrol Boat River). These floating wagons of death were packed to the brim with high powered machine guns, and usually had a couple of .50 calibre 'widow makers' mounted in the nose. They could also haul ass when the situation required the sailors to beat a hasty retreat; unfortunately, they were also about as durable as an origami cube, so it will require some skilled piloting to make the most from these floating death traps.

Another cool feature Scott filled us in on is the

ability to fire from vehicles. "It was also common for soldiers to shoot their weapons out of the Helos when in-bound to the landing zone," he says. "Therefore we've added a feature that allows players to shoot their hand weapons from vehicles." Get Some! Get Some, Get Some!

## Into the jungle

Kilgore obviously isn't the only one who likes the smell of Napalm in the morning - apparently, the BF developers don't mind the occasional whiff either. Besides, it wouldn't be a Vietnam game without canisters of petroleum jelly to drop on screaming children, would it? Other vehicles and weapons that are slated to be included are the F4 Phantom, Sheridan tank, Chinook helicopter, Mig-21 fighter, T-54 Tank, Mi-8 helicopter, RPG-7 rocket launcher, Vespa scooter (oooh scary!), M-60 machine gun, and many others. Sadly, no mention of the humble Zippo, which proved to be quite lethal when applied to bamboo huts.

We were rather surprised to hear the developers would be using the Refractor 2 engine (as seen in BF1942) to power the visuals of BF:V, as this engine seems to specialise in large open areas, instead of the densely vegetated jungles



you'd expect in a Vietnam war game. However, the Refractor 2 engine is going to be getting a major overhaul to help it create believable jungle settings, as well as a few other features that will make BF:V an even more stunning game than BF1942. Scott assuringly explains, "The new renderer will give gamers a dramatic new look at the Battlefield experience." Insert sigh of relief here.

### The whites of their eyes...

A special 'vegetation rendering system' is going to take care of the thousands of palms, ferns, trees and shrubs that will populate the jungle maps, and as you can see from our screenshots, the effect is nothing short of gorgeous. Taking a leaf out of Halo and Brute Force, the tweaked Refractor 2 engine is also going to make heavy use of bump mapping. This should give the even, flat textures seen in the original Refractor 2 engine a more realistic, rough effect. It also means that you'll probably need a fairly decent video card to handle the extra load that bump mapping brings with it, although by the time the game is released we're sure most video cards will shrug off this extra burden effortlessly.

Normal mapping, a special effect that is going to be used heavily in games such as Doom 3, Deus Ex 2 and Far Cry, is also going to be included in the new engine. This has got us REALLY excited. This advanced technique allows for character and vehicle models that look incredibly detailed, yet don't have significantly higher polygon counts than current models. It also allows for the self-shading of models, lending them a much

more life-like look. Rounding out these major improvements to the engine is an improved specular lighting system, which will beef up the lighting effects within the game. Unfortunately our screenshots are from an early build, so don't show all of these spiffy new effects, but we're sure that BF: V is going to be a stunner, considering how lovely the original is to look at.

Something that is sorely missing in BF1942 is integrated voice communications. And we don't want them just so you can hurl abuse at the twats who like to stand at the end of the runway, waiting for a new plane to spawn - although that will be a handy side effect if its implemented. Unfortunately, all the developers would say about voice is, "This is definitely something we are interested in." Which could mean anything. Start spamming those EA forums now folks, and with a bit of luck we'll be calling in air raids or artillery strikes with our real voices rather than hitting F5, F8, followed by F3.

### Ho Chi Minh City

If there is one problem that BF:V faces, it's competition from free mods. At the time of writing, the Vietnam-themed BF1942 mod Eve Of Destruction 12% (so named as it's only 12% completed) was tearing up the online gaming world. So why are people going to want to pay more for a BF:V, when they can get their Charlie bashing fix for free? The obvious answer is to see the many new graphical features that are going to be added to the Refractor 2 engine. Scott also claims, "With Battlefield Vietnam and the new renderer, sound engine, and gameplay features, we are simply taking the Battlefield experience to the next level, in ways that a MOD team cannot." Given the amazing success of BF1942, we've got every reason to believe them. ■







**N**ot too long ago, a member of staff, who shall remain nameless to protect the innocent, questioned why so many first person shooters were based around war. It's difficult not to laugh in the face of such a silly question, but somehow I managed and explained with a painfully straight face that strangely enough, war is quite a rich backdrop for games in which people shoot each other. The nameless individual grudgingly accepted the reason and stalked away. Apparently, EA is of a similar opinion (about war, not the stupid question) as they have recently announced Medal of Honor: Pacific Assault, the next instalment in what they hope will be their a long running series of World War 2 based first person shooters. Hearing the news that EA was going to be putting out another Medal of Honor, we did what any self-respecting game magazine would do - get down on our knees and begged for an interview. Obviously, the gods of gaming were smiling on us that fateful day as we were granted audience (albeit over email) with Brady Bell, Creative Producer for EA's Medal of Honor franchise.

## Over the top

Aside from being able to guess the approximate location of the game from the title, we were pretty much in the dark before speaking to Bell, so started with something simple and asked him when and where the game would take place. "Medal of Honor: Pacific Assault spans the first two years of the Pacific conflict. While our Boot Camp section occurs prior to anything, the game kicks off on December 7th, 1941 - the surprise attack on Pearl Harbor." Bell went into further detail saying, "Without giving away the farm, I will say the game is book-ended by the Japanese attack on Pearl Harbor and the allied assault on the Tarawa atoll. In between are numerous missions that are recreations or referencing historical battles."

Now that we know where and when we are the next most

important question is who? Medal of Honor: Allied Assault saw players take the role of a member of the OSS (precursor to the CIA) and Spearhead cast players as a paratrooper - we asked Bell if we'd be keeping in the role of a specialist. Bell's answer was somewhat surprising in its candour. "In previous titles the player character has been part of OSS, working with the French Resistance and moreover, geared towards individual or espionage type roles. James Bond in the 40s. This was for technology reasons more than anything because we could only render so much and the more friendly NPCs you deal with, the more complicated everything becomes." Brad continued with a little teaser about the new engine behind Pacific Assault, "Going forward, Medal of Honor is more about being part of a larger







effort. The new engine we're developing, coupled with our first game in the PTO is changing how we approach design. You begin MoH: Pacific Assault as a Private in the USMC. While they occasionally come and go, you'll spend the entire game with a group of three buddies (two more Marines, one Navy 'FMC' Fleet Marine Corpsman). Each of the characters is unique and develops over the course of the game - physically and emotionally. We're putting significant effort into representing the subtle changes that a soldier's appearance made during this war - hair length and colour, skin pigment, weight, scarring, uniform, ageing and eyes to name a few."

### Into No Man's Land

Aside from the compelling gameplay, the plot and overall production values of MoH:AA did nothing but impress reviewers the world over. Bell agrees, "Production value has always been a staple of the MoH franchise. From the highest quality art assets and dialog, to the best audio in gaming - production value is a large part of the MoH foundation." He then went on to detail the level of effort the development team is going to so as to make the most realistic Medal of Honor game

yet. "Research has been more extensive on Pacific Assault than the previous titles. We've sent people to Pearl, Guadalcanal, the Philippines and a half dozen other islands in the Pacific. We're working closely with the Nimitz Museum in Texas; the Planes of Fame exhibit in California and as before, the Congressional Medal of Honor Society. We're working with professional military consultants like Captain Dale Dye and Dan King, multiple weapons masters, museum curators, and even an active Staff Sergeant in the USMC. We've gone on multiple weapon shoots where our audio team can record & our animators can fire every weapon we're including in the game. We're interviewing a large group of WW2 veterans who actually took part in the campaigns we're depicting. The list goes on and on, but it all serves the goal of authenticity wherever possible." For those of you who have been longing for a shooter with all of the detail of Band of Brothers, this could very well be it. Ultimately, it seems everything comes back to the overall aesthetic. Bell explains, "Presentation is where the above efforts show their merit. The in-game experience is as real, intense and fun as we can make it."

This, of course, raised one of the issues a number of players





have with a lot of 'cinematic' games - constrictive linearity. For a change, Bell's answer was uncharacteristically vague but leaves us wondering about the end product even more. "I know, that's what it implies. I think it's more about a player's state of mind, than exaggerated camera moves and gameplay that's scripted every five feet. It's about interesting characters in difficult circumstances. It's about making the player feel a connection where they can imagine what it must have felt like... and giving them the opportunity to be a hero every now and again in the context of a greater good." It looks like we'll just have to wait and see. Unfortunately, with the recent Hollywood success of Pearl Harbor, a film loosely based around the facts of the attack, the term cinematic doesn't always have positive connotations when it comes to war. Bell had this to say about the design team's philosophy, "It comes down to credibility. Some developers just pump out a game that's trying to take advantage of a fad and compromises the team in the process. If maturity and knowledge were a prerequisite for dealing with subject

would not be inaccurate." After seeing features of the Half-Life 2 and Far Cry engines, we can't wait to see what cutting-edge innovations the team comes up with. Every game at the moment seems to feature an advanced physics engine or some system of ragdolling, Bell admitted that Pacific Assault would be following suit but added an intriguing little caveat, "Yes, we are currently integrating Havoc into our engine. MoH: Pacific Assault isn't about a physics simulation, but we've targeted several areas where it will add significant depth and interaction within the game."

## Commanding Officers

Whilst we were mostly happy about the level of enemy AI in MoH:AA, we did have a few serious issues. We decided to bring them up with Bell with unexpected results. If it's at all possible for an email to look embarrassed, his reply did. "I hereby promise that you will not run into a squad of unseen snipers who can see and pop you from a mile away without a miss. Yes, everyone agrees that snipers were ridiculously tough in the original game. In MoH Spearhead, we not only tweaked their accuracy, we also added a large dynamic light to their muzzle flash and lowered the percentage of time they'd appear prone." Okay, so now we know what the AI isn't, but what exactly will it do? Once again Bell was very forthcoming with the facts. "In MoH: Pacific Assault, the AI is being overhauled. Things like flanking manoeuvres, advance & cover, banzai charges, staggered formations and hand signals will introduce a much more fluid experience for players. The team spent time in the field with re-enactors and Marines going over WW2 combat tactics from both the American and the Japanese side. We're really trying to capture the strategies that soldiers employed in those environments... but we did it with paintballs."

After the backlash that has recently been directed at games featuring singleplayer-only content, we had to ask about the team's plans for multiplayer in Pacific Assault. "Multiplayer will definitely be a part of Pacific Assault. We're planning to build on top of the 'Tug-of-War' mode introduced in MoH Spearhead,

**Presentation is where our efforts show their merit. The in-game experience is as real, intense and fun as we can make it**

material as serious as this, we'd be much better off. Are we far enough removed from WW2? We're too far removed in my opinion, and that's a tremendous personal reward in working in the MoH universe. People know so little about what was at risk for the entire world during WW2... it could've gone much differently, and we wouldn't be having this conversation. I'm very thankful to have the opportunity to tell the smallest part of the history." We're keeping our fingers crossed that this history will be told accurately to reflect the efforts of all the Allies, instead of simply mirroring the Hollywood driven idea that the US single-handedly won WW2.

Although this month's Elite Force 2 impressed us with the amount of tweaking on the Quake 3 engine, we were relieved to hear Pacific Assault will be featuring an all new graphics engine spec built for the job. Unfortunately, at this stage of development everything is very hush-hush, but Bell could give us a few titbits. "Our engineering team is about five months into development on our new technology - called MoH Tech. Much of what the team is attempting is still under wraps, but saying we're targeting cutting-edge rendering and gameplay features







while also introducing a new mode tentatively called 'Invader' to the MoH community. While some of the maps are specifically built for particular modes, all will be available for Team DM and Free For All." With the recent runaway success of the last EA WW2 title, *Battlefield 1942*, we couldn't help but think the multiplayer element of *Pacific Assault* may seem a little too familiar to some players, but like a .50 cal anti-aircraft gun, Bell shot us down, simply saying, "Battlefield rocks because it focuses on one thing and does it very well. Medal of Honor does exactly same - on the singleplayer side. Games are so big to develop, that unless you have a lengthy production cycle, you need to focus your efforts."

## Call to Arms

One similarity between the two EA titles we expected was the inclusion of drivable vehicles. Imagine our surprise when Bell's responded with this, "We definitely have vehicles and vehicle-based levels in the game. For this title, however, our game design didn't call for drivable vehicles as an integral feature. You'll spend time running amidst tanks, jeeps, planes, ships and amphibious vehicles, as well as man multiple stations aboard a PT boat and go for a bumpy ride in a PBY Catalina." Okay, so no drivable vehicles in *Pacific Assault*, but what about upcoming titles? Now Bell sang a different tune, "For upcoming titles, we definitely have our sights set on controlling vehicles, driving boats and flying planes, but not until we're experts with our new tech and we design a game around it."

Having come this far, I thought it was time to throw in a wildcard question and maybe catch Bell off-guard and milk a bit of information he wasn't planning to divulge. First up, we asked him about what role, if any, Australian troops would be playing in the Medal of Honor franchise. Either Bell had been expecting us to ask something like that or he had really done his homework. No matter the case, our jaws dropped a significant distance to the keyboard when we read his reply. "Australians played a larger role in both the European and Pacific theatre than most people know - over a million soldiers. Our goal is to cover the entire PTO over a series of games in the next few years, hence, the first ending at Tarawa in 1943. While this title



focuses on the USMC, subsequent games will include other branches of the armed forces and nationalities." So far so good, but what about actual inclusion in a game? Two steps ahead of us, Bell had this to say, "It may sound loaded, but we've already targeted the spot where we want to integrate the Australians into the series. Starting in 1944 at Borneo and Bougainville, there were more Australians fighting up to and even after the war was over than at any other time in WW2." Aside from being historically correct, *Pacific Assault* will also feature some educational content, Bell explains, "We're also planning a supplemental section to each title that includes historical facts and a timeline of events. This is our opportunity to educate folks on important contributions and sacrifices that don't always fit nicely into gameplay and story fiction."

Many die hard fans of MoH:AA had complained that the game, whilst amazingly atmospheric and a heap of fun to play, was a little short and seemed to be over before you really got started. For the first time during our email conversation Bell got a little defensive, stating, "I disagree a bit here - *Allied Assault* was around twenty hours and I felt that was perfect length. PC games in general are going towards a shorter, more rewarding, polished experience. I've always preferred this to longer games that could've benefited from more polish on a smaller scale. This is evident even on the hardcore side with Carmack going in this direction with his next title." Okay, point taken, but the fact remains that this is WW2, not *Doom 3*. We'd obviously hit a sore point as Bell continued his defence of the title, "Another angle is the economics. In California, I can pay ten dollars for a ninety-minute movie, or I can pay forty dollars for a twenty-hour game, dust it off a few months later and play it again. Not to mention the limitless multiplayer. Personally, I get significantly more value out of a game than any other media." Fair enough, we can simply agree to disagree, but what about *Pacific Assault*? Bell both disappointed and relieved us with his answer, "MoH: *Pacific Assault* will be similar to *Allied Assault* in length, with a higher replay value. We've added a reward/collectible element, as well as supplemental material you'll want to check out after you've played through." Once again, we'll just have to wait for the finished code to make our final judgement.

Out of all of MoH:AA's failings (not that many) the one that stuck in every player's mind was the truly weak ending. After fighting our way through the Nazi menace and destroying subs all we got was scrolling text! Seriously, what the hell were they thinking? We couldn't let Bell get away without explaining what happened. Though not as apologetic as we would have liked (some grovelling could have gone a long way), our kindly guide cleared up what went wrong and set our hearts at ease, "I know *Allied Assault* had a different ending in mind, they just ran out of time. MoH: *Pacific Assault* is definitely planning to end on a strong note, leaving player's wanting more." From what we've heard so far, we definitely want more. ■









# STEP BACK IN TIME

From the nuclear wastelands of *Fallout* to the chilly climes of *Icewind Dale 2* via the trippy and thought-provoking *Planescape: Torment*, Black Isle Studios has produced several of the best role-playing games of recent times. However, for the upcoming *Lionheart: Legacy of the Crusader*, they've returned to the familiar environs of good old Earth. **DAVID WILDGOOSE** hears it all straight from the Lion's mouth...



"Who said we weren't going to have dragons and goblins?" retorts, Ion Hardie, lead designer and co-producer at Reflexive Entertainment.

Forgive us, we simply assumed, given *Lionheart's* pseudo real world, alternate history *mise en scene*, it wouldn't feature the traditional staples of the role-playing genre. In fact, as it turns out, there are dragons, and they look pretty much how you'd imagine - big, scaly beasts that breathe fire and can step on you so it really, really hurts.

And there are goblins, too. Of course, this doesn't mean Reflexive has followed the *Dungeons & Dragons* formula with respect for fidelity. The *Disjunction*, a catastrophe triggered by the Crusades of King Richard the Lionhearted, opened a portal that allowed magic and spirits onto the Earth. So even though they are using traditional Earth history as a base for the game's setting, the influx of the supernatural has granted a certain amount of creative freedom. Reflexive has enjoyed mixing these elements into the realm of Earth history.

"Our goblins are a bit different,"

Hardie explains. "They gain intelligence by eating the brains of their victims; so the higher you go up the social scale of goblin culture, the smarter they are. I find it interesting to talk to lower level grunts and compare them to the Goblin Khan. They have very different goals and objectives for being the same race. In addition to these fantasy staples, we also have some unique monsters, some inspired

by mythology and others by the weird and twisted imagination of our designers."

This mix of the traditional and the new is an apt summary of *Lionheart* the game, too. It takes the familiar 2D RPG and adds real-time 3D character models. It borrows Black Isle's SPECIAL system (as used in the *Fallout* series) and converts it into a proper real-time engine. And it promises to push the boundaries in terms of genuine role-playing possibilities.



Before we proceed, allow me to clarify something. Black Isle Studios is publishing Lionheart, but - rather than developing it in-house - has farmed out the creative duties to Reflexive, whose previous credits include Star Trek: Away Team. It's an interesting situation, with perhaps the most significant developer of RPGs placing an enormous amount of trust in a small developer with, it must be said, not much of a track record in

the genre. Easing our doubts, Hardie is adamant that the relationship has proved mutually beneficial:

"Black Isle has been very supportive and unselfish with committing resources and time to make the game good. Not only did they care about the quality of the product from the very beginning (more so than just 'will it make money?'), but Feergus Urquhart [the recently-

similarly to Black Isle's Infinity engine titles, such as Planescape: Torment and Icewind Dale, but with the D&D's obscurities replaced by the depth and variety of the SPECIAL system.

When asked about how this variety is made apparent in the balance of the play, Hardie says they've deliberately emphasized combat because the intention all along was to create more of a hack and slash experience. "That said," he continues, "the best experience is for a player who listens, keeps their eyes open, and either plays through once with a high speech skill or at least has a multiplayer game where someone has a high speech skill. There are some dialogue choices in the game that I find very satisfying.

"The nice thing is that the game allows the player to play how they want. If they just want to try and kill things, go ahead. However, it will be way more difficult for the player that just tries to slaughter everything than for the player that pays attention to what people are saying."

## Blood and books

If you do plough ahead, sword at the ready, leaving a trail of blood and dismemberment in your wake, then chances are you'll be missing out on more than just what people are saying. Reflexive is enormously proud of the sheer volume of characters, story events and other game elements they've drawn from months of exhaustive research. Delving deep into Earth history, lead writer Eric Dallaire gathered so much information on so many historical events and cultural legends, it almost proved overwhelming. But creating an alternate history timeline was ultimately an enjoyable experience for the whole team.

"The real fun has been to take historical events and make them mirror real history, but with crucial differences," says Hardie. "For example, the real Spanish Armada did not have magical eradication as their goal... but ours does."

Another interesting event Reflexive decided to incorporate into the story was the attempted Mongol invasion into Eastern Europe. In reality, Batu Khan was recalled in 1241 from his European invasion because of the death of the Great Khan Ogedei. In Lionheart's

altered history, the Great Khan Ogedei cheated death by binding with a great Fell Spirit released by the Disjunction. Because Batu Khan did not have to go home and help elect a new Khan, he was free to invade Europe. The European armies, weary from the Fourth Crusade against the Storm Dragons, were no match for the onslaught. As a result, Mongol Forces penetrated deep into Europe, forcing the Holy See to relocate to Spain.

Hardie grows increasingly animated as he relates this event and others in fanatical detail. Once reminded that this feature occupies only four pages rather than the entire magazine, he pauses for breath and suggests we check out the game's official website (<http://lionheart.blackisle.com>) for a more in-depth reading of the timeline. We do so, post-haste. There, the words 'Knights Templar' catch our eyes.

"Honestly, for me, the name grabbed me the first time I heard it," Hardie begins, as if on cue. "Before we had done a lick of

"THE BEST EXPERIENCE IS FOR A PLAYER WHO LISTENS, KEEPS THEIR EYES OPEN, AND PLAYS THROUGH ONCE WITH A HIGH SPEECH SKILL"



departed head of Black Isle] wrote a 60-70 page document about how the Fallout rule system could be converted to a real-time gaming environment. At the time I was just trying to wrap my hands around the transition process, and it wasn't until later until I realised just how valuable that document was. We really need to at least buy them all a drink when Lionheart ships!"

The fruits of Urquhart's endeavours are evident when you see just how much more accessible the system is compared to the at times clunky and cumbersome Fallout experience. Lionheart is definitely not a turn-based game. Events unfold in real-time, while you can pause the game whenever you like and manipulate your inventory, ready spells or make a cup of coffee. Action Points (APs) are still used, but only in the sense that they provide a comparative rating as to how quickly a character can perform certain actions. Ultimately it plays





research, I thought the name was cool. To make matters worse, when we looked at what they did historically, it just furthered our desire to build them in. Overall, the Templars have a very rich complex history that is still very interesting and relevant, especially the theories that they protected sacred relics and hid them away in secret locations. We definitely intertwined that myth into our game and made the Knights Templar a very prominent faction."

The Templars have proved a rich vein over the years for game developers to tap when searching for narrative hooks. They're well-known enough to strike a resonant chord amongst gamers, yet mysterious enough for developers to have them being responsible for all manner of devious plots. Surely there must be some sort of conspiracy here, Ion?

"I can't speak for other developers," Hardie replies. "But in *Lionheart*, the Templars fit like a glove into the historical groves of our altered timeline. And no, I am not a card-carrying, sword-wielding, tattoo-branded member no matter what you may have heard."

## Faction Fighting

The Templars are but one of several factions in positions of power throughout *Lionheart's* Europe. The Inquisition is a clerical order out to banish magic's taint from the world. The Order of Saladin is comprised of warrior monks sworn to protect sacred relics from the east, as opposed to the Templars desire to protect sacred western relics. Meanwhile, the elusive Wielders are unique in that they believe in the capacity of magic to do good, but they're not terribly keen on arguing the case with the Inquisition.

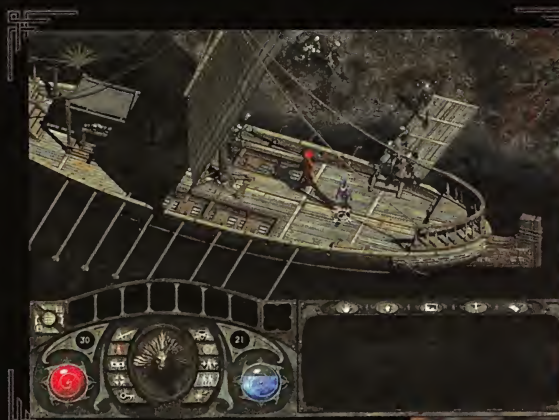
Each faction presents the player with specific quests - some of which may well end up pitting one faction against another. In terms of design, these factions serve as stepping stones into the main story, while also helping to shape your character throughout the game. There could be crucial moral choices to make as you progress and ultimately affiliate yourself with one of the factions. As you might

expect, such choices carry significantly more weight when you're dealing with real world events, alternate history or otherwise.

Indeed, there's much more at stake when you're dealing with this genuine human element. And, for Hardie, this is the most important element of an RPG:

"The reason that so many RPGs have featured elves, dragons and goblins is that, for some reason, people want and expect that from their fantasy environment. As other RPG experiences come on line, more in the vein of *Deus Ex*, the more the human element is being listened to and expanded upon, and the more expectations can change. The elusive "human element", the component that mixes together people's expectations, past experiences and their desire to be entertained, ultimately shapes the games that will be made."

Just don't forget the dragons and goblins. Even if they are a little... different.





# REFRESH

A month's a long time in gaming. But it doesn't mean every imminent title gets finished. Here's some that aren't quite done yet...

## Republic: The Revolution

Developer: Elixir Studios ■ Publisher: Eidos ■ Distributor: Atari ■ Due: Q4 2003

The revolution is postponed another month

At each of the past three E3s, we've attended demonstrations of Republic, but this month presented the first opportunity to actually play it for ourselves. It's always sounded cool, the idea of wheeling and dealing your way to overthrow the government of a fictional Eastern European state. But, if only because it's such an unconventional concept, we've never been entirely convinced it could translate successfully into a game.

Starting a new game of Republic is a curious process. Much like the Ultima games of old, you're asked a series of ten questions dealing with circumstances of your character's past, and it's up to you to choose how you would have acted. This personality quiz determines your initial characteristics of Status, Charisma, Control, Presence and Resolve, thus influencing the type of political leader you may turn out to be.

From there you're immediately presented with a view of the game's first city, Ekaterine, in all its glory. People and cars wander the streets, and you can click on them to hear their thoughts, similar to the Sim or Tycoon games. However, your first task is to recruit a coterie of henchmen and advisers. This involves selecting a candidate and a location to meet, then playing through a complex card-based game as you attempt to convert them to your cause. Even the order in which you approach



candidates can affect your relationship – snub an old school friend and he'll be less inclined to join you. Once recruited, these men can be assigned to survey various districts and foster support or agitate dissent depending on who's in power there.

After our brief experience, we can report that Republic definitely has a game in there, even if it's more like a board game than we had anticipated.



There are still some graphical glitches to iron out – not to mention some major performance issues when touring the city in first-person. We've also, like a good right-hand man, advised Elixir to incorporate a much-needed tutorial, since a game as in-depth as this desperately needs one.

After our experience, we can report that Republic definitely has a game in there, even if it's more like a board game than we had anticipated.



### CALL OF DUTY

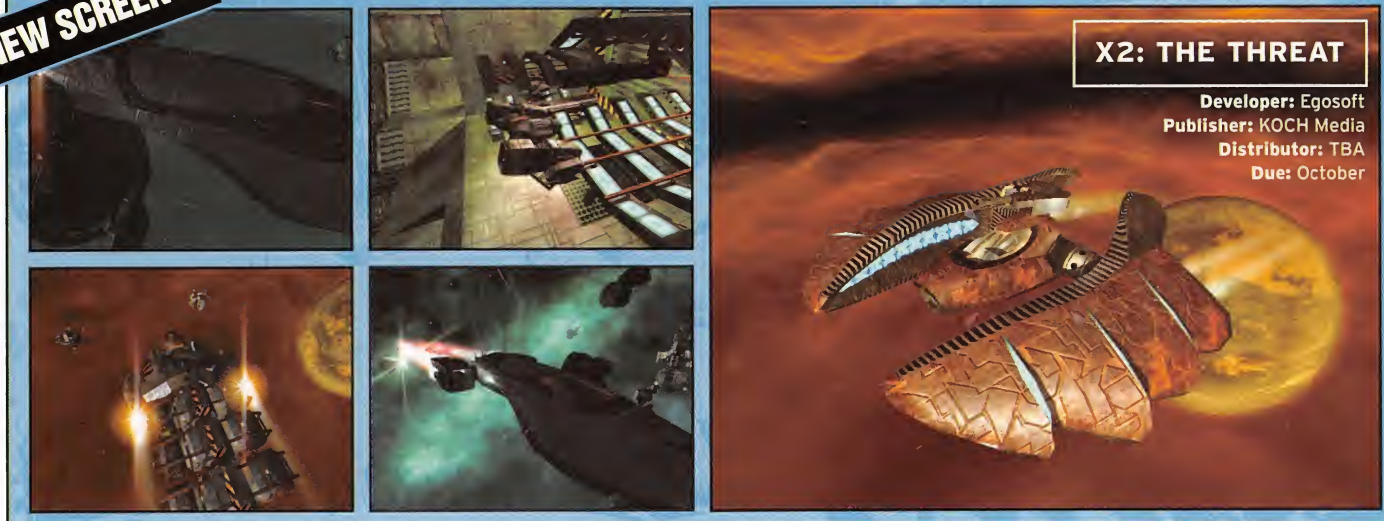
Developer: Infinity Ward  
Publisher: Activision  
Distributor: Activision  
Due: Q4 2003



NEW SCREENS!



**NEW SCREENS!**



## X2: THE THREAT

Developer: Egosoft  
Publisher: KOCH Media  
Distributor: TBA  
Due: October

## Tomb Raider: Angel of Darkness

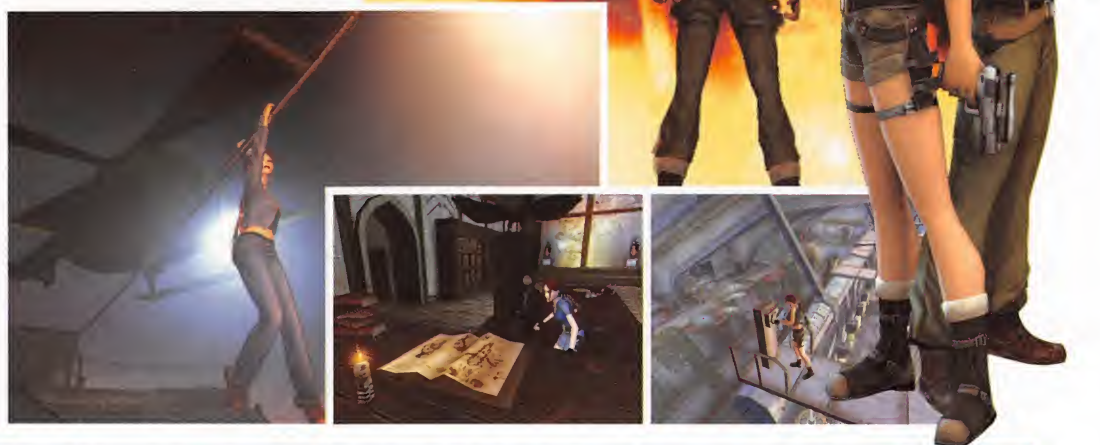
Developer: Core Design ■ Publisher: Eidos ■ Distributor: Atari ■ Due: No idea

**It's nearly done. Or is it? We just don't know...**

**F**irst it was down for release in June (Well, that's not entirely true. It was originally scheduled for last November. Then February. Then April. And then finally June). Then it was September. Then it was June again. We're now writing this at the end of June and, while the PS2 Angel of Darkness has just hit retail in the US, there's still no sign, nor even confirmation, of the PC release.

However, we have had the chance to play it. And, erm... yes. In some ways, it's still very much a Tomb Raider game. Lara's in it, for a start. She still jogs like she's wading through treacle and she still requires finicky adjustments when navigating the environment. Which would be okay if she was still exploring the more abstract, maze-like locations of the first game. There, the think-before-you-jump ethos made sense. Here, throughout semi-plausible real-world places, it just seems incongruous.

Still, the plot has managed to intrigue us, and the Paris level reminded us, albeit briefly, of the Paris level in Deus Ex. But we hope it's delayed again to allow for more work to be done.



## Lords of the Realm 3

Developer: Impressions ■ Publisher: Sierra ■ Distributor: Vivendi Universal ■ Due: Sept 25

**Filling the gap nicely between Total Wars**

**M**uch like Kohan: Immortal Sovereigns or Battle Realms, this is one of those unassuming titles whose arrival won't be accompanied by the kind of fanfare reserved for, say, the next Craft or Age iteration, but it will in all likelihood prove just as – if not more – playable. For those who get to play it, at least.

Impressions boasts a long history of producing quality strategy titles and is probably best known for the Caesar series of city builders. Lords of the Realm 3 departs from that template by shifting the focus towards military campaigns. In fact, the code we've seen reminds us a lot of Creative Assembly's

Total War franchise, which is a very good thing in our book. There's an overhead map, spanning the breadth of Europe and some of Asia, upon which you conduct all sorts of strategic sweeps. Then there's the 3D battlefield,

generally focused around forts, towns and castles, where you command your battalions to glorious victory (or bitter defeat, in our case).

All up, a quiet achiever, but an impressive one, nonetheless.





TECH

# 256FAST 256FURIOUS



*Anthony Fordham has a problem with authority. He really wants to be one. So we gave him the two fattest cards on the market and told him to certify the best.*



# *RADEON 9800 Pro 256MB vs GeForceFX 5900 Ultra 256MB*

**A**t last, after waiting for barely 18 months, it's possible to buy a video card with as much memory as your entire system. While the likes of Dell and Acer are offering package PCs with 256MB of RAM, NVIDIA and ATI are offering graphics adaptors with the same amount of memory. A quarter of a gigabyte. On a video card. Has the world finally gone mad?

Of course, both of these cards demand a significant investment of cash, care and sleepless nights as you lie awake, wondering how long it will be before the next thing comes out and makes your \$1000 card obsolete. Both these cards are serious polygon flingers as well, returning ridiculously high scores in a variety of intensive benchmarks. But which is the better investment? Last issue, we would have told you to run screaming from GeForceFX and give your love to RADEON. This time, performance alone is not going to make the decision for you.

## **RADEON 9800 Pro**

First, some introductions. This is the RADEON 9800 Pro, 256MB version, in this particular case from Gigabyte. Meanwhile, just as nVidia is ditching DDR-II as too expensive, ATI is picking it up. The lower latency of DDR-II and the massive 256MB of memory are designed pretty much for one thing - hi-res FSAA. Unlike a 128MB card, the 256MB 9800 Pro can run 4X FSAA at 2048x1024 and 6X FSAA at 1920x1200. There are 16 Samsung K4N26323AE-GC22 memory modules on the board, eight on each side, and each has its own heatsink which is sorely needed - they run so hot they're painful to touch. Unlike the NV35 however, the 256MB version of the Radeon 9800 isn't a new core, it's exactly the same as a normal, 128MB Radeon 9800, except the memory is now rated at 350MHz DDR-II instead of 340MHz DDR.

So while nVidia is fielding a new core to answer criticisms of its previous cards, ATI is sticking with a winning formula and merely adding twice as much somewhat faster memory. Keep that in mind as you examine the benchmark results.

Slipping it into your machine, you'll realise the card is somewhat longer than a standard RADEON, by about a centimetre and a half. Unlike the 5900 Ultra it only takes up one PCI bay, and also needs a power connector from your PSU. A full molex connector is necessary, which replaces the old four pin floppy connector found on previous RADEONs. This is a good thing, as the old power connectors always felt a little flimsy.

Apart from that, it's the same as a 128MB RADEON 9800 Pro. Same support for 16X anisotropic filtering, same 6X FSAA, same ATI 'marketecture' features that don't really have much relevance here. All in all, a solid package.

## **FX 5900 Ultra**

The NV35, NVIDIA's latest progeny, on the other hand, is a total beast. As we've come to expect, it takes up two PCI bays, thanks to the big black cooler bolted to both sides of the card. And what a card! Easily five centimetres longer than a standard graphics card, it was a real chore easing this thing into the roomy Lian Li PC6070 case. However, this card is an engineering sample and NVIDIA assures us the production card will be somewhat shorter. It's still very big though.

Few would disagree that nVidia made more than a few design blunders with its earlier FX chipset. A 128-bit memory bus thanks to expensive DDR-II memory, likewise expensive 0.13 micron process, insanely high 500MHz core clock all added up to low yields, high prices, a whacky and screamingly loud cooling system, and lacklustre performance.

Many of these issues have been addressed with the 5900 Ultra or NV35 as the core is known. It now uses readily available DDR memory, supports a 256-bit memory bus, runs at a more sedate 450MHz core, will cost less and has an onboard fan that, while large, no longer sounds like a Huey spinning up for an assault on the village.

In addition to the rectifications, a new memory interface dubbed IntelliSample HCT claims to improve the efficiency of 4:1 colour compression, which should flow through to better full scene anti-aliasing (image smoothing) performance. The famous CineFX marketecture is now at version 2.0 and now includes UltraShadow, a technology designed to improve framerates in games using stencil shadows, such as Doom 3.

It's a bigger chip, at 130 million transistors, about five million more than its predecessor the NV30 (GeForceFX 5800). Here's hoping the improvements result in superior benchmark performance and will at last make a high-end GeForceFX worth buying.

The whole thing weighs about 1.5 kilos; this is definitely one card that you want to lay your case on its side to install. Solid? Like a brick.

## **Overclocking**

Before we get into the benchmarks, a quick word on overclocking. Both these cards are pretty thrashed out to start with,



## BENCHMARKS

All benchmarks were run in 32-bit colour. 3DMark2001 SE Pro results were obtained using all available tests. 3DMark03 tests did not include the Mother Nature game test due to the GeForceFX's poor support for the pixel shaders Futuremark uses in this test. [H]ardOCP's UT2003 benchmark version 2.1 results are the average framerate obtained from six flythroughs of UT2003 levels such as DM Antalus and DM Asbestos, chosen for their variety of geometric and texture details. The 5900 Ultra does not support 16X anisotropic filtering, but results from the RADEON's 16X tests are included to show the performance hit at this high level of filtering.

so any significant tweaks will require extra cooling, preferably involving Freon. With the standard coolers though it's possible to wring out a little extra oomph - 12MHz on the RADEON's core, and 30MHz on the 5900 Ultra's. Memory could

likewise be pushed 9MHz on the RADEON and a respectable 30.5MHz (61Mhz DDR) on the 5900 Ultra.

Bottom line though, the extra speed these overlocks return is anywhere between two and six frames per second in UT2003 with 4X FSAA and 8X anisotropic filtering, so the extra stress this tweaking will put on your cards is probably not worth the minimal boost.

## Performance

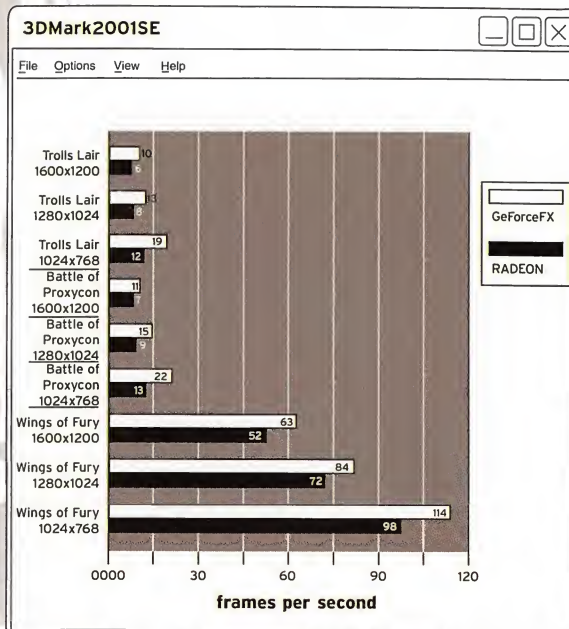
We trundled these cards through a wide variety of tests, and the full gamut of results can be seen on the adjacent page. A few things to note:

In the ageing, but still relevant, 3DMark2001 tests (after all, most games still rely on the relatively primitive DX7 and DX8), the RADEON fractionally beat the 5900 Ultra, although the margins narrowed even further at higher resolutions. But in the newer 3DMark03, the 5900 Ultra took a significant lead, partly thanks to its superior memory bandwidth.

In the [H]ardOCP UT2003 tests, the 5900 Ultra was also the winner, beating out the RADEON by a handful of FPS at each resolution.

There were a couple of notable exceptions though. Firstly, the 5900 Ultra doesn't support 16X anisotropic filtering. Also, while its 2X and 4X Full Scene Antialiasing (FSAA) performance was good, once we cranked it up to 6X, the 5900 Ultra took a nose dive while the RADEON powered on. Once again, you can see the results of this when it comes to image quality.

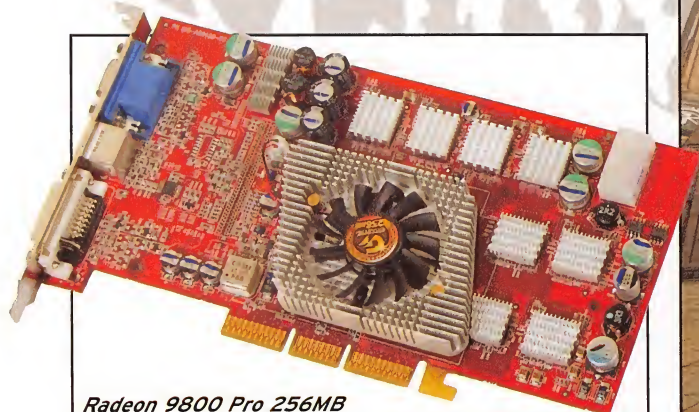
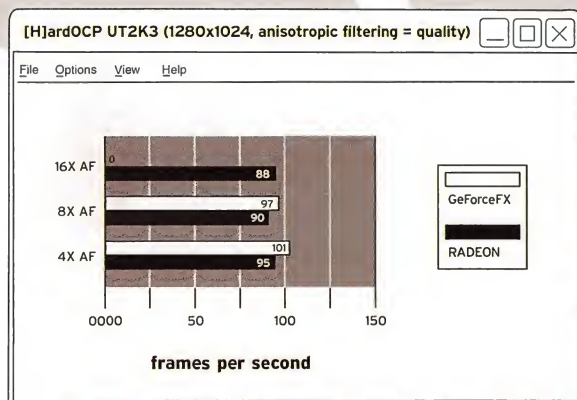
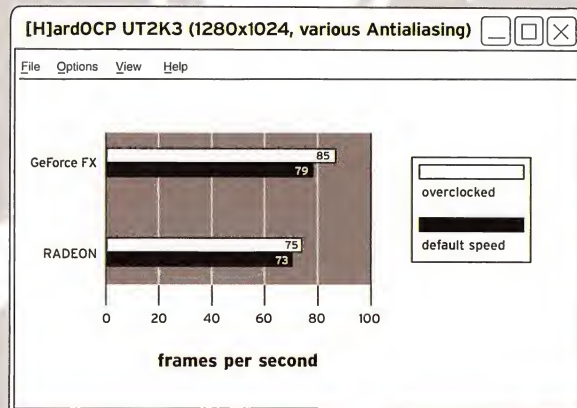
We can presume from the results that the 5900 Ultra's faster core and memory clock helps it shift raw data, showing NVIDIA's typical obsession with framerate at the expense of image quality.



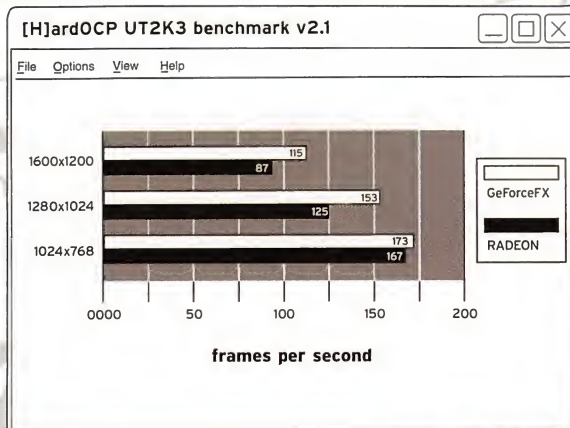
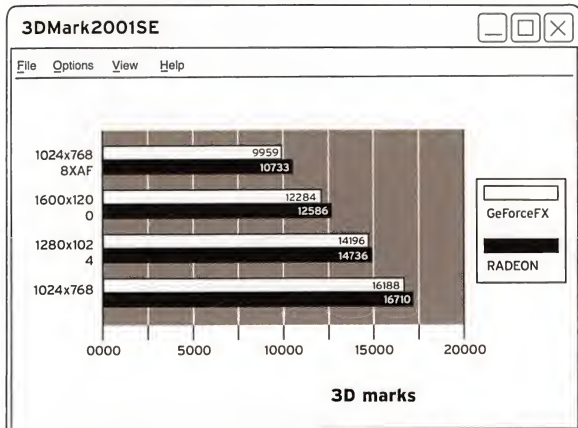
## Image Quality

Speaking of image quality, the results are once again a very mixed bag, with neither card having a distinct overall advantage. We used UT2K3 to check out which card had the best image quality, using the 4X anti-aliasing setting, and then the 8X anisotropic filtering setting.

If you have a look at the anti-aliasing screenshots, it's clear that ATI's rotated grid sample anti-aliasing technique gets rid of the dreaded jaggies much better than NVIDIA's ordered grid sample anti-aliasing technique. This is even more noticeable when you're actually playing games with the 9800 PRO's anti-aliasing







looking markedly better than the 5900 Ultra. So, scratch up a point on the image quality scoreboard to ATI.

Now look at the anisotropic filtering screenshots. It's immediately obvious the NVIDIA card shows more detail in the foreground. Just look at the bottom of the screenshot to see what we mean. At first, we had thought the NVIDIA card lost more texture detail the further the texture appeared away from the camera, but after close examination of both shots, realised this was simply because the NVIDIA card had higher detail in the foreground. Due to this, we have to give NVIDIA the anisotropic filtering crown.

So, the RADEON 9800 PRO excels at anti-aliasing, while the 5900 Ultra is the champion of anisotropic filtering. Which makes recommending one card over the other, in terms of image quality at least, next to impossible.

## So? Which card?

Proclaiming either card a clear winner is also impossible, as the results favoured both cards, depending on the

test that was run.

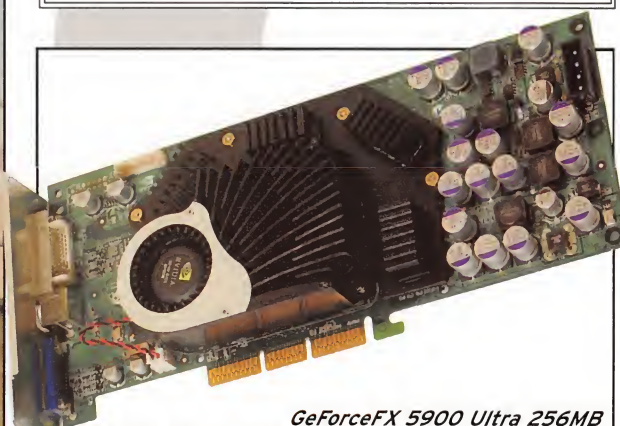
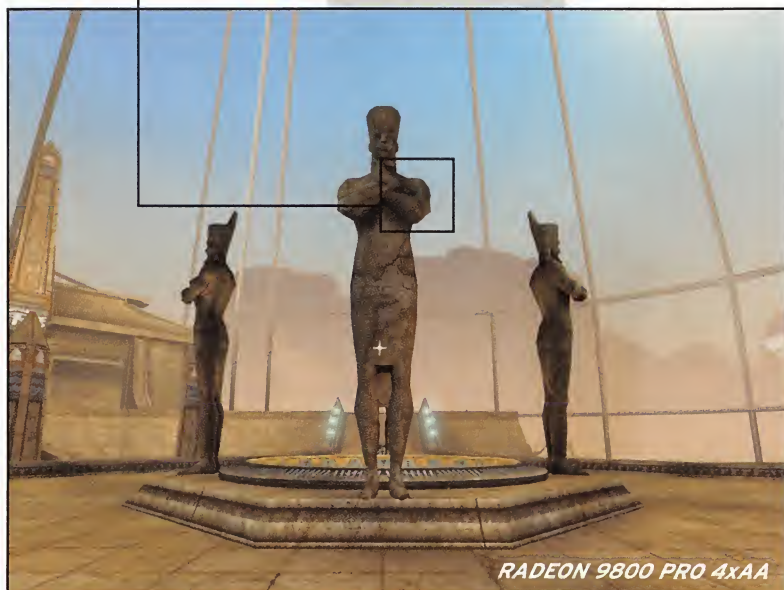
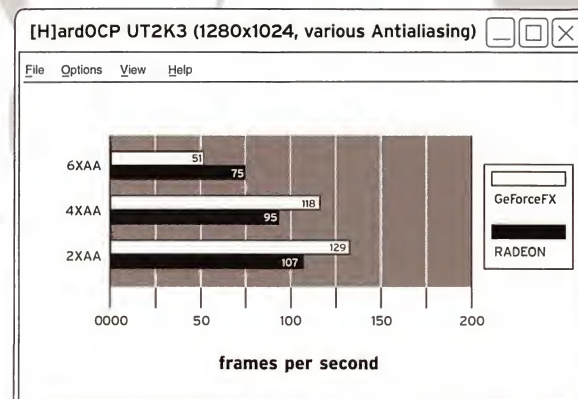
However, the NVIDIA does seem to have the most overall power of the two cards on offer, although only by the slightest of margins. Sadly for NVIDIA it appears this is going to be one incredibly expensive video card - prices we're hearing at the moment start at \$1,100 and move upwards. Is it really worth paying so much more for a video card when the performance is only marginally greater? Personally, we'd err toward the more reasonably priced RADEON 9800 PRO with 256MB of memory - it's a few hundred cheaper at least, and keeps up with the 5900 Ultra at all but the highest of resolutions. One thing's for sure though; we've now got two closely matched, powerful video cards to choose from, which can only drive further innovation and price drops. Ahh capitalism, ain't it grand?

### TESTBENCH

We used Catalyst 3.4 (RADEON 9800 Pro) and Detonator 44.03 (FX 5900 Ultra) drivers, with a clean Windows install between cards.

The following components were kindly supplied by Altech ([www.altech.com.au](http://www.altech.com.au))

- CPU: Pentium 4 3GHz
- 800MHz FSB
- Mobo: ABIT IC7-G 875P
- Memory: 512MB Corsair XMS3200
- Cooling: Corsair Hydrocool water cooler
- OS: Windows XP Service Pack 1





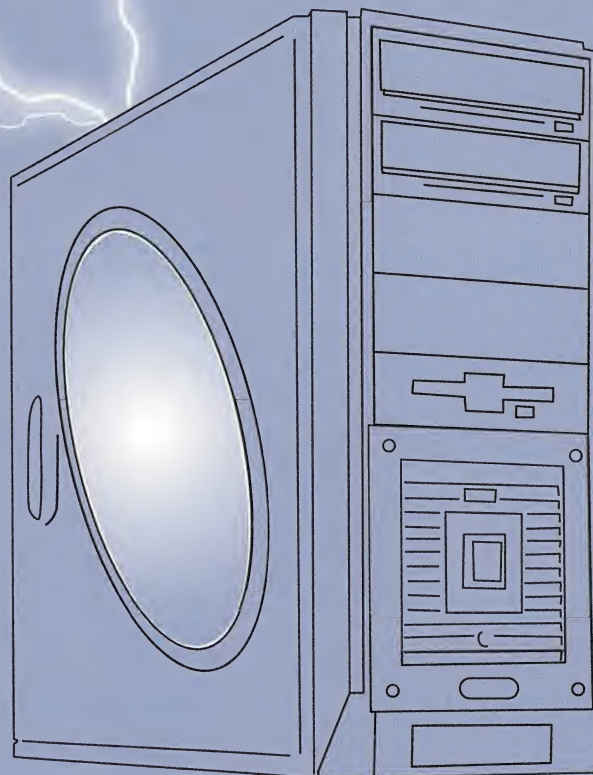
Gary  
Coleman.

For some  
totally  
bizarre,  
unfathomable  
reason, this out of  
work actor is adored  
and revered by gamers across the globe. Lord knows why - he's  
short, creepy and is really only memorable for saying "Watchoo  
talkin' bout Willis?". Overclocking is something else that is loved  
by gamers, but for more tangible reasons. Offering high  
performance at a minimal cost, as well as the potential to own a  
machine that is faster than anything currently available, it's no  
surprise that performance hungry gamers are the number one fans  
of this mystical art. In case you've been living in an NBC shelter since  
9/11, let me explain by firstly saying you need to stop worrying,

Armageddon turned out to be  
nothing more than a really bad  
movie. Secondly, you might not  
have a very good idea of what overclocking is. In essence,  
overclocking is simply running a component at a speed faster  
than what the manufacturer has specified. It's similar to  
tweaking a car engine to deliver the best possible  
performance, although you don't have to be a redneck hoon  
to overclock. Overclocking can be applied to several key  
components within your PC - the CPU, frontside bus,  
memory, and video card being the

most common. We  
want you to have a  
good idea of the  
overclocking basics,  
so you'll be able to  
understand our  
future reviews,  
some of which  
are going to  
have a stronger  
focus on the  
art of  
overclocking.

# The ABC of Overclocking





#### CRAWL BEFORE YOU FLY

Before you start overclocking your system, make sure it is 100% stable at default speeds. We're talking 100% stable, not 99%, so spend a week or two making sure it all runs okay. Only then should you delve under the hood of your PC, as this makes it much simpler to identify whether it's the overclock causing crashes, or a totally unrelated system problem.

**T**here are two reasons why we're able to overclock components. The first of these is due to the variance that manufacturers have to deal with when their devices are installed in a variety of PCs. It's safer to have a little headroom in the speed of a product, in case it gets installed in a machine that runs the device slightly out of spec, rather than ship a product that is running with its foot to the floor, hovering on the dangerous borderline between stability and instability.

The second reason is due to the way components are manufactured, which applies mostly to CPUs, but is also relevant to other components such as video cards and memory. When Intel or AMD creates a batch of CPUs, they don't have different production lines for each speed of the chip. Instead, all chips that use the same architecture are produced on the same fabrication line. However, due to the immense complexities involved with building such an intricate device, each CPU turns out slightly differently to the next. The CPUs are then tested, and those that manage to run at the highest speed are 'binned' to become the fastest processors, while those that can't quite make it are relegated to lower speeds. However, as a fabrication line is refined over time, most of the CPUs that are produced on it are capable of hitting the higher speeds, but Intel or AMD still need to sell lower speed CPUs to fill that segment of the market. So they impose an artificial ceiling on the performance of the CPU. Overclockers exploit this artificial ceiling, running the CPU at the maximum speed that the processor architecture is capable of.

There are risks involved with overclocking, but they're nowhere near as worrying as what many will have you believe. I've personally overclocked dozens of components over the last

three years and have never damaged a single piece of hardware. Usually, the worst that can happen is the corruption of data on your hard drive, requiring a reformat and Windows reinstall. Learn from my lesson and back up any important data before beginning.

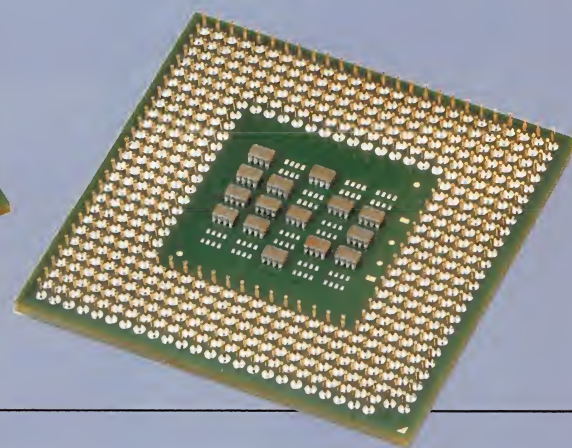
Most overclocking usually involves the application of additional voltage to give the component a helping hand and thanks to a process known as electromigration, this can cause components to wear out before their expected due date. So instead of lasting, say, ten years, an overclocked CPU might only last four years, but by that stage it's already entered the retirement village of obsolescence. And being a gamer, you probably upgrade your CPU on a yearly basis, so you won't even notice. Installing custom cooling goes some way to lessening the risks associated with higher voltages, which is why water and Peltier cooling are becoming increasingly common.

The second risk is caused by uneducated overclocking, which occurs when people try to overclock without doing a little research first. A prime example is adding far too much voltage to your CPU, causing it to emit a fragrant blue smoke within seconds

of booting up. Always find out what the maximum safe settings are to use with each component, and there are dozens of online message boards (from both manufacturers and fellow overclockers) that will show you just how far you can push a component before it gives up the ghost. Check our boxout on page six for a few of the sites we rely upon for accurate information. However, often the best place is the website of the manufacturer of your product.

Once you get your head around a few fundamental points, overclocking is actually quite simple, something that many elitist Nerds would rather you didn't find out. However, it does require a healthy dose of patience to find the optimal settings for a given piece of hardware.

The following guide will show you how to overclock the Intel Pentium 4 and AMD Athlon XP, as well as a general guide to video card overclocking. Please note that overclocking will void your warranty, so if things go pear shaped, please don't come crying to us. Follow the guide correctly, and this won't happen. Interestingly, it's usually impossible for a hardware supplier to determine if a piece of hardware has been overclocked once it has been removed from your PC - use that nugget of information however you like ;).



#### You have been warned!

Overclocking of components within PC voids the warranty on those items. There's also a risk of frying your lovely new toy, especially if you use ridiculously high voltages. Stick to our guide and you shouldn't have a problem, but PC PowerPlay can not be held responsible for any damage that might occur as a result of following this article. Don't say we didn't warn you!



## CPU Terminology

Unless you enjoy frying expensive hardware, there are several key terms you need to understand before overclocking your Intel Pentium 4 or AMD Athlon XP. You can find all of these settings in your PC's BIOS, accessed by hitting delete when your computer boots:

**CPU frequency:** The speed of your CPU in MHz or GHz. This is determined by multiplying the frontside bus (fsb) by the CPU multiplier. For example, a 2.4GHz Pentium 4 runs on a 200MHz fsb with a 12X multiplier. On the other hand, an Athlon XP at 2.16GHz has a fsb of 166MHz with a 13X multiplier. Simple math, really.

**Frontside bus (fsb):** The data bus between your CPU and memory, with all of the PCI and AGP slots being linked to this bus. All Pentium 4s use a "quad pumped" fsb, so divide the fsb that is advertised by four to find out what it will look like in the BIOS. This means that an 800MHz fsb Pentium 4 will actually appear as a 200MHz fsb in the BIOS, while the 533MHz fsb Pentium 4 appears as a 133MHz fsb. AMD use a double pumped fsb, so divide by two instead.

The fsb is the most crucial setting when overclocking the Pentium 4, as its multiplier can't be changed. Therefore, to increase the speed of the P4 (using the formula: CPU speed = fsb x CPU multiplier) you need to increase the fsb. Using the beloved 2.4C as an example, to run at 3GHz simply increase the fsb to 250MHz (an increase of 50MHz over the default of 200MHz). Thanks to the 2.4C's multiplier of 12X, the new CPU speed is 12X 250MHz, which equals 3GHz. This is why your motherboard, and how fast its fsb can run above the default speed, is a crucial factor in how fast you'll be able to overclock your CPU.

**CPU Multiplier:** The factor by which the fsb is multiplied to determine the frequency of your processor. On all Intel CPUs, this is locked, meaning you can't change it. Intel did this to stop stores selling pre-overclocked CPUs disguised as higher speed CPUs at a higher price. The multiplier can be changed on AMD CPUs, which is why overclocking the

Athlon XP can be a slightly different process to the Pentium 4. Each CPU speed has a different multiplier. The 2.4C Pentium 4 has a 12X multiplier, while the 2.6C has a 13X multiplier, the 2.8C has a 14X and so on.

**CPU Voltage:** The voltage supplied by your motherboard to the CPU. When overclocking, increasing this slightly usually results in a higher stable overclock. With both the Pentium 4 and Athlon XP, we don't recommend increasing the voltage by more than 10%. However, if you've spent a couple of hundred dollars on a performance cooling solution, such as Peltier or water cooling, you can probably get away with a 15-20% increase in the voltage.

**AGP/PCI ratio:** The speed at which the AGP and PCI slots run is determined by this ratio. The AGP and PCI slots are designed to run at 66MHz and 33MHz respectively, however, when you increase the fsb, due to the fact that the AGP and PCI slots are linked to your fsb, their speed will also increase. And your PC will crash. If it boots up at all. So you need to choose the AGP/PCI ratio that suits your higher fsb best, and should keep these slots operating as close to their default speeds as possible. You might see a ratio such as 8:2:1, 6:2:1 or various other combinations. The first part of this refers to the fsb, the second to your AGP speed and the third to your PCI speed. Using the 6:2:1 ratio as an example, to find out how fast your AGP and PCI slots will run is very simple. Divide your fsb by 6, then multiply the result by 2 for AGP speed, and by 1 for PCI. If we had a fsb of 240MHz and used this 6:2:1 ratio, our AGP would therefore run at 80MHz while the PCI would run at 40MHz - and there is no way that most AGP or PCI devices will run at these speeds, causing your system to crash.

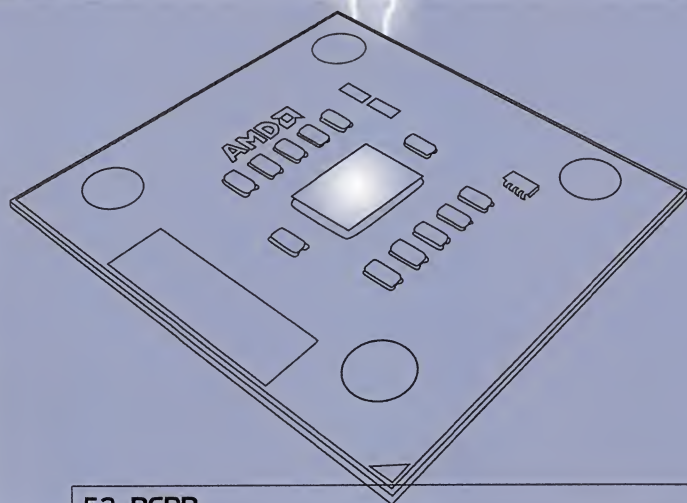
Most reputable overclocking motherboards have an option to set your AGP/PCI ratio to fixed, meaning that the speed of these ports is locked at 66MHz/33MHz, regardless of how fast your fsb is running. Use the fixed setting if it's available to you. Make sure you get this setting right, or else a corrupted OS will be waiting to snatch away any data that hasn't been backed up.

**DRAM or memory ratio:** Similar to the AGP/PCI ratio, this ratio determines the speed at which the memory is run. Again, because your memory speed is linked to the fsb, you must choose the DRAM ratio that sets your memory as close to its rated speed as possible, based on what speed the fsb is running at. It works on the same principal as the AGP/PCI ratio. An example of a DRAM ratio is 5:4, with the 5 representing fsb speed and the 4 representing the memory speed. To find out how fast your memory is going to run at, using the 5:4 ratio as an example, simply divide the fsb by 5 and then multiply it by 4. For a 3:2 ratio, you'd divide by 3 and multiply by 2.

So if you were to increase your fsb to 250MHz, and wanted to use DDR400 memory, you would need to use the 5:4 ratio to run the memory at 200MHz (which is effectively 400MHz due to it being DDR-SDRAM). However, if we raise the fsb to 275MHz, and keep using the 5:4 ratio, our memory would now be running at 220MHz (double pumped to 440MHz), which is 10% faster than what it's rated for. Some memory might be able to run at this speed, but most will not. In this case, you would need to set a more conservative ratio of 3:2, which would then run the memory at 183MHz (double pumped to 366MHz) - well within its rated speed of 200MHz (double pumped to 400MHz).

**Memory voltage:** Just like the CPU voltage, adding a little extra juice to your memory can help it reach speeds above what the manufacturer intended. We don't recommend ever going above 2.8V for most brands of RAM, although enthusiast brands can be quite happy to run at 3V. Check the website of your RAM manufacturer to find out the safest maximum voltage for your memory module.

**CPU temperature:** If it goes faster, chances are it'll run hotter. Often you'll need to replace the HSF that ships with your CPU with a supertastical high speed screamer to control the heat on your newfound super chip. However, we've discovered that the stock Intel cooler does a great job on the new C model P4s, while AMD CPUs gets the most benefit out of a custom cooler. Keep a close eye on temperatures after overclocking to make sure they are within safe limits.



### STEP THIS WAY, SIR

A term that you'll often hear when overclocking CPUs is its stepping. This refers to the small refinements that manufacturers make to a CPU architecture over the life of a product line. So for any one CPU, there may be several steppings of the chip. Newer steppings tend to overclock better than earlier steppings of a chip. We'll have a more detailed stepping guide, focusing on how to identify the various steppings of the major CPUs, in an upcoming PCPP.



## Intel Pentium 4

The current king of overclockers, the 'C' Pentium 4 processors are setting the overclocking world on fire, with the Pentium 4 2.4C offering the best bang for buck (these are known as the 'C' Pentium 4 due to the C after the processor speed, such as 2.4C, 2.6C, etc, and run by default on an 800MHz fsb). We've tested five different Pentium 4 2.4Cs, and found the maximum stable speed to be between 3.3GHz and 3.5GHz - not bad for a \$350 CPU, considering you can't even buy Pentium 4s this fast, and a 3.2GHz Pentium 4 will set you back anywhere between \$800 and a grand. So how did we manage to wring an extra 900-1100MHz for free out of this CPU? Please note that we used the ABIT IC7 to overclock the 2.4C, with 2 sticks of 256MB of Corsair XMS3200LL (DDR400) memory. Also, the settings that we changed, and the sections they can be found in, might have different names depending on which motherboard and BIOS you're using.

### Step 1

After making sure our system was nice and stable at default speeds, the first setting to be changed was the CPU Vcore (voltage). Increase this to 1.7V and then reboot. Praise Allah that your PC didn't burst into flames.

### Step 2

The next step is to lock the AGP/PCI ratio. Thankfully, the ABIT IC7 allows us to lock these so that the AGP is always locked at 66MHz, while the PCI is set to 33MHz, regardless of how insanely high we push the fsb. If you can't lock it, buy another motherboard ;). But seriously, choose a ratio that allows you to keep the AGP and PCI slots as close to their correct speeds (66MHz and 33MHz respectively).

### Step 3

You now need to set the DRAM ratio, which controls the speed of the memory. It's best to go for a conservative setting first, so that you can find the ceiling of your CPU before you start tweaking your memory. On the IC7 the lowest setting is 3:2 - when the fsb is at the default of 200MHz, this sets the memory to run at 133MHz, well under its maximum speed.

## Step 4

Now it's time to overclock the CPU. Hang on to your hats, pardners! Set CPU frequency to manual, which should allow you to start making adjustments to the fsb speed. Try to stop trembling in anticipation.

## Step 5

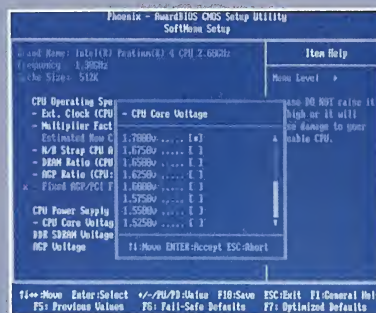
It's time to start increasing the fsb frequency. It's best to do this in small increments of around 5MHz or so, but because we knew the 2.4C would easily reach 3GHz, we started off with a 50MHz increase, bringing the fsb up to 250MHz (because it's quad pumped it's effectively a 1GHz fsb - yes, a 1GHz fsb!). Reboot your PC, and if it makes it into Windows, start testing for stability.

## Step 6

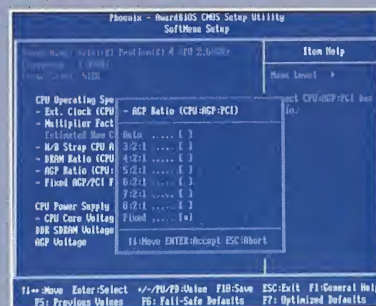
Repeat step 5 until you can't increase the speed of your CPU without the system crashing. Notch it back to the last stable setting. On most of our 2.4C processors, this was a fsb of 275MHz, giving us a final stable speed of 3.3GHz. Yum.

Now it's time to get the most out of your memory. On the IC7 the other DRAM ratio is 5:4, and after selecting this ratio our memory was now running at 220MHz. Well, for all of 30 seconds before crashing. However, once we lowered our fsb to 267MHz, giving us a CPU speed of 3.2GHz, our memory was quite happy to run at 216MHz, albeit with relaxed memory timings (2.5-3-3-8). The decrease of 100MHz in CPU speed (a 3% drop) was well worth the increase in memory frequency of 19%. Once you've found the maximum speed, try slowly dropping the CPU voltage until your machine starts crashing again. This will help to keep your CPU as cool as possible.

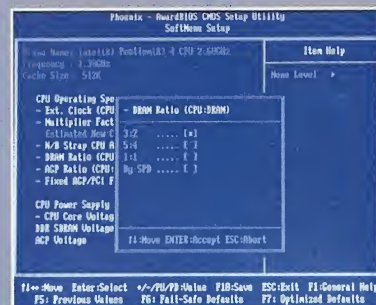
We now have a 2.4C churning away happily at 3.2GHz, with a fsb of 267MHz (quad pumped, effectively giving us a fsb of 1068MHz), with our DDR-RAM running at 216MHz (double pumped effectively giving us 432MHz). Our overclocked processor will even outperform the real 3.2GHz Pentium 4 thanks to its overclocked fsb. Not bad for a day's work, huh?



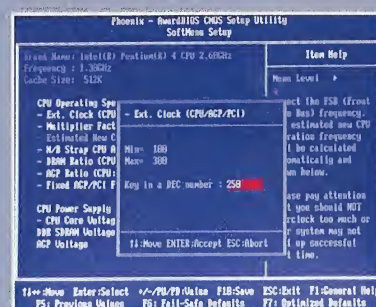
Step 1: CPU Vcore



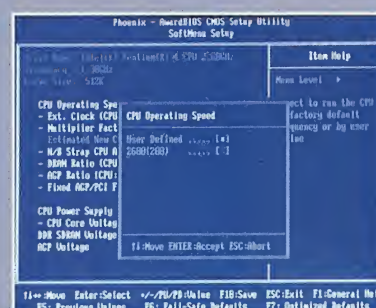
Step 2: AGP/PCI Ratio



Step 3: DRAM ratio



Step 4: CPU



Step 5: fsb frequency

### STABLE TABLE

Once you've overclocked your PC, you'll need to make sure it's stable before trying to overclock it even further. The best way to do this is to use it as you'd normally use your PC - play some games! Sheesh, this overclocking business is hard work, isn't it? However, this method takes the most time, so we recommend leaving 3DMark2001SE in looping demo mode for an hour or two. If it doesn't crash, you can try an even faster speed. Many people recommend Prime95 for CPU stability testing, but we've seen instances where a machine is perfectly stable for day to day use such as gaming or web browsing, but the machine would crash as soon as Prime95 was run.



## AMD Athlon XP

AMD is kind enough to allow multiplier adjustments on the Athlon XP processors, and the main benefit of this is that you don't need to overclock the fsb, so you don't need to worry about locking the speed of your AGP and PCI slots. It also makes it much simpler to find the limit of your CPU, without being held back by what your motherboard's fsb is capable of. However, fsb overclocking is relevant to the Athlon XP, because it's still the best way to get the maximum performance out of your system.

We used the NFORCE 2 based MSI K7N2 Delta motherboard, again with our Corsair TWINX 512 XMS3200LL kit, to overclock an Athlon XP 2200+. The current overclocking champ of the AMD CPUs is the Athlon XP 1700+, Thoroughbred B core, however, these are getting increasingly difficult to track down.

Many NFORCE 2 motherboards are able to unlock the multiplier automatically, but if yours doesn't, you'll need to manually unlock the multiplier. There are dozens of quality of guides on Net about the best way to do this, which differ slightly depending on the type of Athlon XP you're using.

We're going to show you the simplest way to overclock the Athlon XP - via the multiplier. However, to extract maximum performance out of your Athlon XP, use the exact same steps as the Intel overclocking guide, although you'll be starting with a default fsb of 166MHz (for this CPU at least) instead of the P4's 200MHz, and will have more options for the DRAM ratio, allowing you to squeeze even better performance out of your RAM. The 200MHz fsb NFORCE 2 motherboards make for a nice overclocking platform for the 166MHz fsb Athlon XPs, as the

motherboard has plenty of headroom to overclock the CPU's fsb.

### Step 1

Head to the section of your BIOS that contains the overclocking features - this is under the Frequency/Voltage Control section. The first thing to do is increase the voltage - raise it to 1.7V and reboot your PC.

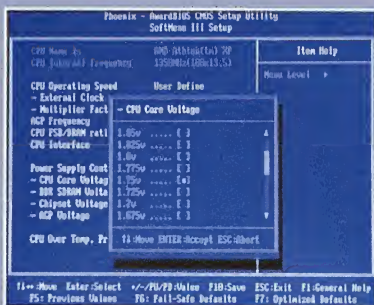
### Step 2

You now need to increase the multiplier. For the Athlon XP 2200+, the default CPU multiplier is 13.5X, with a default fsb of 133MHz (giving this CPU an actual frequency of 1800MHz). Increase this to 14.5X (if the option is available, 14X if not) and reboot.

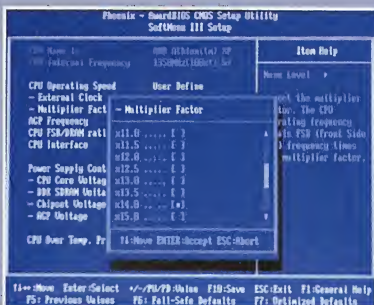
### Step 3

Repeat step 2 until your machine starts crashing. You can probably expect to increase the CPU by around 1 to 2 steps up the multiplier ladder before it starts crashing. Once you've found the maximum stable speed, lock the AGP/PCI ratio or find the best ratio for your memory, as described in the Intel guide, and slowly increase your fsb by 1MHz increments until the machine becomes unstable again. Once your PC starts crashing again, back it down to the last stable setting and admire your handiwork.

You have now overclocked your Athlon XP. While multiplier overclocking is the quickest and simplest way to overclock your Athlon, we'd have to recommend that once you're comfortable with overclocking, try the fsb method used on the Pentium 4. This will get you the maximum performance, because you'll also be running your fsb at its maximum possible speed, instead of just the CPU.



Step 1: Increase voltage



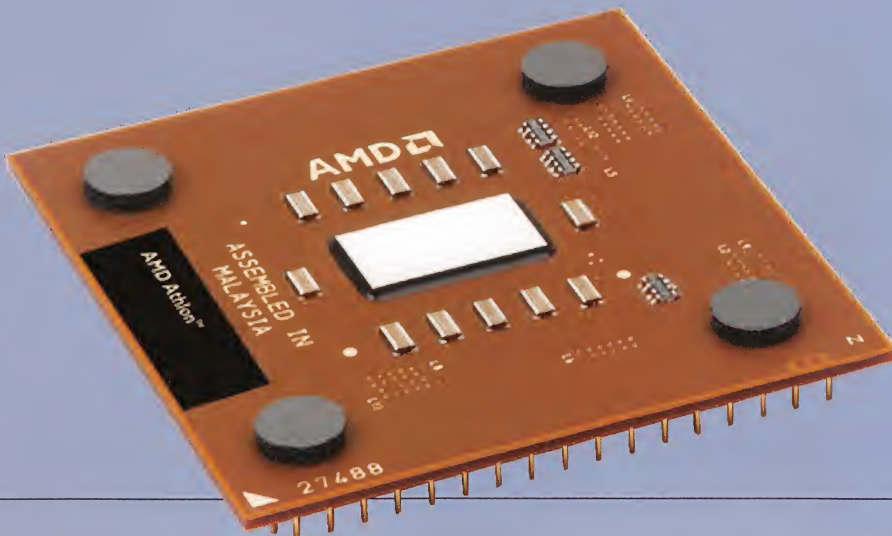
Step 2: Increase multiplier

### OVERCLOCKING SITES

Overclockers Australia  
[www.overclockers.com.au](http://www.overclockers.com.au)  
 Overclockers.com  
[www.overclockers.com](http://www.overclockers.com)  
 [H]ard OCP [www.hardocp.com](http://www.hardocp.com)  
 OC Addiction [www.ocaddiction.com](http://www.ocaddiction.com)

### BUT IT SHOULD BE FASTER!

Just because you've overclocked your CPU by 30% doesn't mean you can expect game performance to shoot up by 30%. This is because system performance is a combination of all the components in your system, from the memory to the video card to the CPU. However, under some circumstances where the CPU is the limiting factor, such as a game that has intense AI algorithms, you could well notice a speed increase the same as your overclock. But don't expect it all the time, ya greedy sod.





## Video Card overclocking

Compared to overclocking your CPU, video card overclocking is a total walk in the park. Seriously, even a handicapped chimp blindfolded and with both arms amputated can manage to overclock a video card. It is that simple. There are only two separate settings that you need worry about when overclocking your video card: core and memory speed.

Core speed refers to the speed of the graphics chip that your video card is based on. For example, the RADEON 9700 PRO's graphics chip runs at 325MHz. Yet many overclockers have successfully run the core of the 9700 PRO at 370MHz or higher - a significant speed increase of around 14%. Core speed overclocking will have the largest impact on polygon and triangle throughput, as well as antialiasing and anisotropic filtering. It can also help out with demanding pixel and vertex shaders.

Memory speed is simply the speed at which the video card's onboard memory runs. Most modern video cards now use Double Data Rate SDRAM, which doubles the output of the memory per clock cycle. So a DDR-SDRAM module running at 300MHz is effectively running at 600MHz. This is the same concept that we talked about with the quad-pumped and double-pumped fsb's of the Athlon XP and Pentium 4. Overclocking your memory will have the greatest performance boost

when running at higher screen resolutions or higher texture resolutions.

When overclocking your video card, you must pay special attention to testing it. Unlike CPUs, video cards tend to be damaged more easily just by being overclocked, even though we don't need to increase the voltage supplied to the components. So after increasing any of the speeds on your video card, we recommend leaving 3DMark2001SE in looping demo mode at a resolution of 1280 x 1024 or higher.

If you notice any strange graphical anomalies at all, such as "snowing", weird polygons or anything else that you wouldn't normally see, clock your video card back down to its last stable setting. You'll need to run the demo for a good 10 minutes or so to get the card nice and hot, but stay in front of your machine for the entire time. If you keep running it while these graphical anomalies are present, you could do permanent damage to your video card. Patience is the key, Grasshopper.

### Step 1

You will need to install an application that allows you to overclock your video card at the Windows desktop. That's right, you needn't go anywhere near your BIOS - woot! We highly recommend PowerStrip, available from [www.entechtaiwan.com](http://www.entechtaiwan.com). Once it's installed, go to Performance profiles ->

Configure... and make sure Disable Clock Controls is unchecked. Then use the Engine clock and Memory clock sliders to overclock.

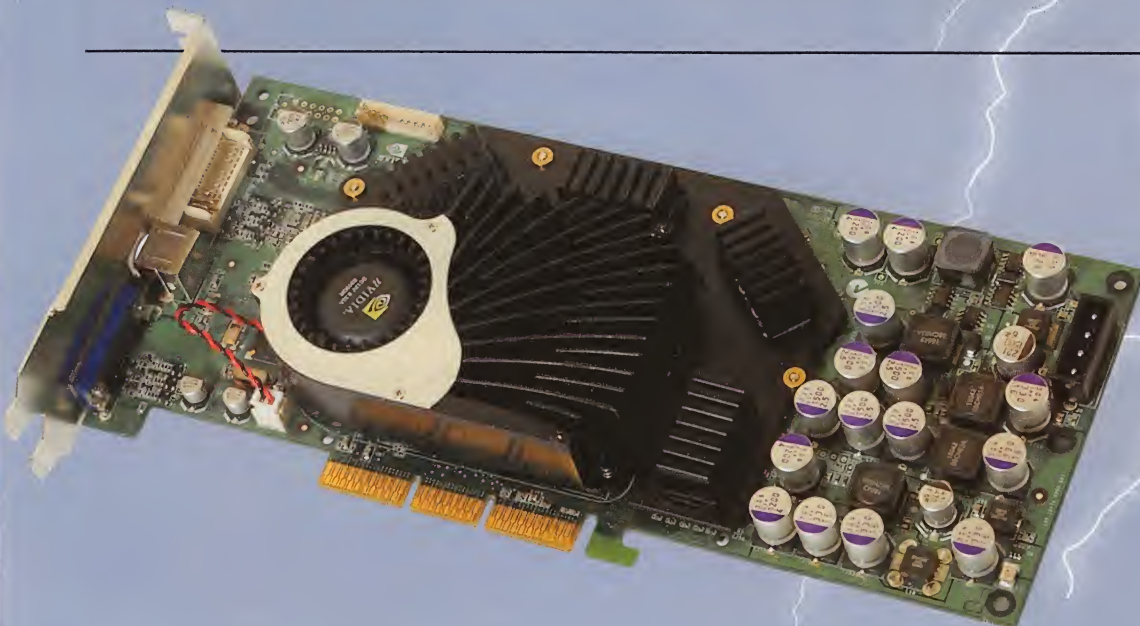
### Step 2

Start raising your core speed in 5MHz increments, running the 3DMark2001SE demo mode as suggested above between each speed increase. When you feel like you've just taken a tab of LSD thanks to the bizarre visual that start occurring on screen, it's time to crank it back a notch. You've now found the fastest speed that your video card's core will run at.

### Step 3

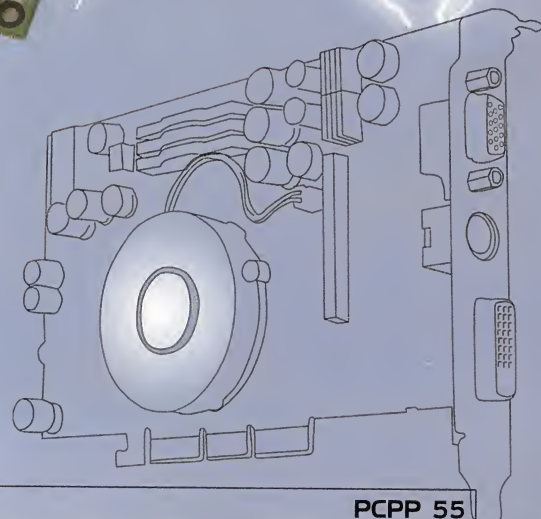
Once you've established the core ceiling, do the exact same procedure with the memory speed, raising it in 5MHz increments, testing between each speed increase. Once you start seeing weird onscreen graphical artifacts, lower it to the last stable speed.

You've now successfully overclocked your video card. In general, video card overlocks can have a greater effect on frame rates than CPU overlocks, especially when running at higher resolutions. However, we can't stress enough how closely you need to keep an eye on your video card after increasing its core and memory speeds, as damage to your shiny new \$700 wunder card is the last thing you want...



#### A BURNING SENSATION

Just like cars, it's best to run your components for a while before overclocking. So run your machine solidly for a week or so to burn in your CPU, memory and video card before overclocking. You might even find that after a month or so of running at the overclocked speed, you'll be able to overclock even further.





# THE LIST

After weeks of boozing, fighting, weeping and the occasional bribe, Anthony Fordham is left to pick up the pieces and present PC PowerPlay's guide to the 100 games you should definitely own, in the following order...



## Our Panel of Judges...



## Our Judging Criteria...

This year the list is all about evictions. We hacked and we've slashed. We've booted such illustrious personalities as Duke Nukem, Lara Croft, Kyle Katarn and more. We've taken a long hard look at what makes a game great and whether or not you would still bother playing it today, and that's resulted the list, probably the most definitive list we've ever produced.

The list is made up of the 100 games that are still fun to play, not mere historical curiosities. All of these games will entertain and engross, and a gamer is not a

true gamer unless they can say they've spent at least ten minutes with each of the following.

Of course, some of our evictees were less than impressed at being left out, but honestly, it was that kind of behaviour that got them evicted in the first place. We've included a few of their comments, mostly for your amusement, but hopefully also to send a message that these great figures of gaming need to seriously pull up their socks if they want their inevitable sequels to find a place in next year's list. Now, let the nominations begin!



## Space Tripper

Released: 2001 From: Pom Pom

The definitive recreation of all that was good about the arcades of the 80s. Part Defender. Part psychonautic experience, all solid, addictive game. Still available online and really cheap.

100



## Day of the Tentacle

Released: 1993 From: LucasArts

Once upon a time when adventure games were popular, playable and funny, the prince of the genre was LucasArts. Day of Tentacle is just whimsical enough to be totally engrossing, and weird enough to intrigue.

099



## Icewind Dale 2

Released: 2002 From: Vivendi

Half RPG and half epic poem, IWD2 shows exactly what you can do with nothing but a handful of sprites and ten thousand lines of dialogue. Makes D&D cool again.

098



## Iron Storm

Released: 2002 From: Take 2

Pits you against a Russian empire in an alternate 1964 where World War I never ended. A variety of environments, groovy guns and neat scripted sequences keep things interesting.

097



## Silent Hill 2

Released: 2002 From: Konami

Genuinely creepy, this is one PlayStation2 port that actually works. Engrossing storyline, characters you care about, and more than a couple of stomach-churning moments. Scary!

096



## Need for Speed

Released: 1995-2002 From: EA

Gaming wouldn't be the same without Need for Speed. Every year, a dependable new release. Fast, furious, full of fat cars and cops driving Lamborghinis, NFS is foolish but definitely fun.

095



## Unreal 2

Released: 2002 From: Atari

This game should have ranked much higher. Graphically definitive, it otherwise disappoints on almost every level. Bland gameplay, bland weapons, bland enemies. But amazing graphics, did we mention?

094



## Abe's Exoddus

Released: 1999 From: GT Interactive

Just when we thought the 2D platformer was dead, along comes Abe. Gamespeak allows you to communicate with your buddies. Fart jokes amuse the kids. Goth-shamanistic industrial style bleeds atmosphere.

093



## Impossible Creatures

Released: 2002 From: Microsoft

Should also have scored higher but wastes its innovative army-building design inside a staid RTS formula. Sticking a few different animals together doesn't equal revolution, but it does equal solid gameplay.

092



## Madden 2003

Released: 2002 From: EA

For a sport we don't even play in this country, this definitive gridiron simulator sure is popular. Every year a new version and every year a better simulation, now with tighter buns!

091



## Return To Castle Wolfenstein

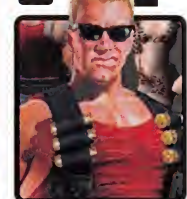
Released: 2001 From: Activision

id proves you can go home again, and Return to Castle Wolfenstein turns out to be a good, if rather typical, FPS. Thrashed the Quake 3 engine to within an inch of its life.

090



EVICTED!



DUKE  
NUKEM

(grunt), Well sure, I had an awesome time in the list and it really changed my life but I was ready to leave you know? Like, fully I had been in there in every list and it was getting old and I wanted to see store shelves again, you know? Like? So my new game is going to be amazing and I've signed up for a whole bunch of other promotion deals, it's going to be great. The list has really changed my life. Thanks guys, I love every single one of you.

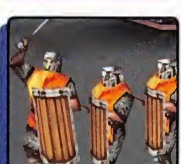
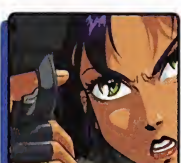
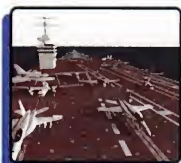


EVICTED!



## LARA CROFT

I think the list really didn't show who I really was. I think there was editing, you know, selective editing to turn me into some kind of bad girl or something. I know that's what the market wants and all that and sure, I've got movie deals and a line of lingerie coming out thanks to the list, but really, I think Duke's portrayal was the most inaccurate, he used to get his willy out all the time, but they never showed that, they just showed me showering in my underwear and that makes me bad for some reason.



089

## Links 2003

Released: 2002 From: Microsoft

Before you poo-poo this golf sim, try it. Surprisingly playable, deep and easy to get into, it's great for killing time, although it is responsible for a lot of societal violence.

088

## Jane's F/A 18 Hornet

Released: 2000 From: Jane's

If you like the idea of flying an outdated fighter attack aircraft, engaging in a variety of missions and enjoying an unparalleled flight model, this is the game for you!

087

## Arcanum

Released: 2001 From: Vivendi

Dispenses dungeons and dragons for 19th Century steamworks, orcs running speakeasies, and some of the most detailed charisma-driven dialogue ever seen. A seriously different RPG for serious players.

086

## Earth 2150

Released: 2001 From: Ozisoft

In a market clogged with boring RTS, Earth 2150 makes a difference. Customisable armies, detailed terrain rules, full 3D engine and strategy worthy of the name. A brace of sequels extends the goodness.

085

## Praetorians

Released: 2002 From: Infogrames

When several Rome-flavoured games popped up at once, Praetorians was the best. Tidy 3D graphics, a gameplay model that's different but works, and tortoise formations make for vini vidi vici every time.

084

## Oni

Released: 2001 From: Take 2

Who said beat-em-ups don't work on the PC? Oni works, pitting the anime-chick goodness of the heroine against faceless evil in an endless series of violent punch ups. Bonzer!

083



## Leadfoot

Released: 2001 From: Ozisoft

Who woulda thunk it, indoor stadium off road 4x4 racing? A US sport simulated by an Aussie developer. Sick jumps, sicker turns and a variety of trucks keep it interesting.

082

## Warrior Kings: Battles

Released: 2003 From: Infogrames

Just when the fate of 3D military strategy looked to be entirely in Medieval: Total War's hands, along comes WKB. Extending on the earlier game it beefs the strategy and beefs the goodness.

081

## Empire Earth

Released: 2001 From: Vivendi

Another disappointment, this promised to be the ultimate RTS, blending Civ with Age of Empires. Instead, it merely turns out to be a good standard RTS with slightly higher than normal variety.

080

## The Last Express

Released: 1997 From: Broderbund

An adventure game that definitely skipped the groove. Funky cartoon stylings, groovy Orient Express type setting, and an unusual event system that means things still happen even if you aren't there. Wild.

079

## B-17 2

Released: 2001 From: Microprose

Big bombers are beautiful and being able to sit at any gun, look out any window and take on any mission is very near the Mecca of big bomber gaming.



## Mechcommander 2

Released: 2001 From: Microsoft

The only thing better than stomping around in a 50t killing machine is bossing around a whole squad of them. Definitive squad-based strategy with unique FASA flavour.

078



## Archimedean Dynasty

Released: 1997 From: Blue Byte

Sub warfare should be slow and boring, but not if the subs are souped-up fighters. Slick graphics, slick missions and slick storyline make this the Wing Commander of the seas.

077



## Commandos 2

Released: 2001 From: Infogrames

More puzzle game than squad-based strategy, this doesn't mean Commandos 2 isn't engrossing, infuriating, rewarding and blisteringly difficult all at once. Includes the most insanely detailed sprites ever.

076

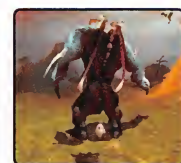


## Giants

Released: 2001 From: Interplay

One of the oddest games ever combines squad-based action, RTS, jetski racing and eating things to create a serious freaked-out experience. There's also a nudie patch readily available, which is good.

075



## The Thing

Released: 2002 From: Vivendi

For when too much Kurt Russell is barely enough, and too many alien monstrosities to keep your pulse pounding. Slick survival horror and excellent use of light and shadow.

074



## Serious Sam

Released: 2001 From: Take 2

Even though only adding 1000 monsters doesn't equal Doom, Serious Sam remains the only pure run-and-gun shooter that laughs at itself just hard enough to not feel pompous.

073



## Age of Wonders 2

Released: 2002 From: Take 2

Turn-based epic fantasy doesn't get much better than this. A fat bestiary, plenty of spells, lots of land to conquer and an AI that can blindsides even experienced users keeps AOW2 fresh.

072

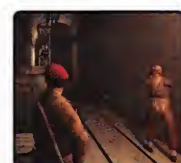


## Hidden & Dangerous

Released: 2001 From: Talonsoft

Decent squad-based tactical games are thin on the ground, but H&D ranks among the best. WW2 action with plenty of vehicles and weapons, it's like Commandos on speed.

071

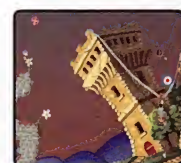


## Worms World Party

Released: 2001 From: Take 2

They're pink, spineless and homicidal. Since the first iteration of Worms on PC, the franchise has just grown stronger and stronger. Unleash those grandmas of death! And squish your peers.

070

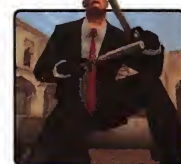


## Hitman 2

Released: 2002 From: Infogrames

Another puzzler disguised as an FPS, this game has the baddest, baldest protagonist and some of the nastiest weaponry in the business. 47 tried to be a gardener. Then all hell broke loose.

069



## Tony Hawk 4

Released: 2002 From: Activision

Allegedly the most popular sporting series ever, and with good cause. A detailed trick library captures the essence of extreme skateboarding - right down to the blood!

068



EVICTED!



LUKE  
SKYWALKER

I'm actually here as a bit of a representative for all Star Wars games because you know, they all got kicked off the list and I think that's wrong. Really, wrong. Like, I can't believe people would vote out all the Star Wars games. I know how they got nominated, because everyone on the list is afraid of stuff that's bigger than them - or in Duke's case of people who actually release games - but the evictions? I mean, come on people, it's STAR WARS!

EVICTED!



TWINSEN

Yeah, I think being in the list for the past couple of years has been the biggest little big adventure of them all. I had an amazing time and no one laughed at my hair, they were all really accepting, you know? That's what the list is about, acceptance and also love. But also about beating Duke, so it's good to see that Godless bastard get the shaft too.



EVICTED!



067

## Flight Sim 2002 Pro

Released: 2001 From: Microsoft

No guns, but plenty of detail. First in the series to have really decent looking clouds and ATC voice out of the box. Plus, you can land 747s in Homebush Stadium.

066

## Doom

Released: 1993 From: Activision

The great granddaddy of them all, and still one of the finest pure shooters thanks not to hundreds of enemies, but brilliant level design and plenty of secrets.

065

## Max Payne

Released: 2001 From: Take 2

Won praise first for actually managing to get released, and then won further praise for injecting much needed style into the staid FPS genre. Bullet time rocks.

064

## Trainz Ultimate Collection

Released: 2002 From: Auran

When the makers of Dark Reign decided the world really needed a model train simulator, they went all out. HO gauge nuts the world over still spend hours with this thing.

063

## Secret of Monkey Island

Released: 1990 From: LucasArts

The original and still the best. Pioneered insult sword-fighting, zombie pirates and, of course, monkeys. All the sequels are great, but this is where the greatness began.

062

## Warzone 2100

Released: 1990 From: Eidos

While every other RTS developer was still thrashing around with sprites, Pumpkin Studios leapt into 3D, with more than 2000 unit combinations, real line-of-sight effects and a crazy attitude.

061

## Master of Orion 2

Released: 2001 From: Pom Pom

Master of Orion 2 remains the definitive space empire builder, unsurpassed even by its lack-lustre sequel. Turn based, incredibly detailed, yet not overwhelming - you really believe the galaxy is yours.

060

## Rollercoaster Tycoon

Released: 1999 From: Microprose

In a world choked by a thousand Tycoon games, the one standing above the rest models not the financial empires of the West, but rollercoasters. Detailed, intricate, and with crazy loops.

059

## Conflict Desert Storm

Released: 2002 From: Infogrames

Squad based strategy strikes again, this time with a detailed 3D engine, quick pace and anti-Iraqi stylings. A variety of vehicles and weapons keep the action from getting sand trapped.

058

## Heroes of Might and Magic

Released: 2002 From: Take 2

Ah, Heroes of Might and Magic. Where would PC gaming be without it? The latest version adds more spells, enemies, heroes and tweaks the gameplay. Now nerdier than ever!

057

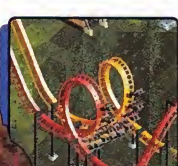
## Fallout 2

Released: 1999 From: Interplay

Truly one of the great RPGs for any platform, this sequel improves on the original post-apocalyptic masterpiece with a more detailed skills system and heaps of enemies. It's caesium-tastic!

## THE VANGER

Man, I was just on drugs all the time, I didn't even know what was going on. Hi, mum!



## THEO

Okay, so picture this, I'm sitting there with that Doom Marine geriatric old fart and everyone is laughing at his jokes and listening to his stories and I'm like, dudes, he is so ten years ago! What the hell are you doing, you want gaming history look at ME! I was the first 3D shooter! What the blistering blazes is all this BSP worshipping crap about? So yeah, I nominated myself. No really, I did. Fine, don't believe me then.



## NASCAR 2003

**Released:** 2002 **From:** Vivendi

You may only ever get to turn left, but legions of fans would have it this is the most realistic motorsport simulator available on PC. Big cars, big grunt, turning left. Go figure.

056



## The Longest Journey

**Released:** 1999 **From:** Red Ant

Released late in Australia, in early 2002 actually, this game proves the adventure is far from dead. Deep, involving, and full of naughty lesbians. No, really.

055



## Zeus

**Released:** 2000 **From:** Vivendi

The little men games have a proud history, and Zeus is their proudest moment. Run an Ancient Greek city and keep not only your people happy, but the gods too.

054



## Mafia

**Released:** 2002 **From:** Take 2

Be in the mafia, with all that entails. High action, role-playing, racing, stunt driving, this game has it all. Like a 1930's era GTA 3, with more brains.

053



## Sudden Strike 2

**Released:** 2002 **From:** CDV

While there are a number of dodgy WW2 RTS games, Sudden Strike 2 makes more than a decent fist of modelling the era. Lots of different bits of hardware, and plenty of violence.

052



## Aliens vs Predator 2

**Released:** 2002 **From:** Vivendi

Aliens vs Predator 2 is one of the few genuinely scary games for PC. Or at least, the Marine section is. Modelling three different species adds lots of variety, although the game is a bit short.

051



## Chessmaster 9000

**Released:** 2002 **From:** Ubi Soft

Which game has the best AI in this whole list? This game. Seriously challenging and full of options, even the Labrador Retriever will mercilessly crush you in a fool's gambit.

050



## EverQuest

**Released:** 1999 **From:** Ubi Soft

The third best MMORPG in the world. Full of hundreds of thousands of scarily dedicated people, some of whom dress up and do this stuff in real life. Creepy.

049



## Homeworld

**Released:** 1999 **From:** Vivendi

Just when every RTS out there looked like a C&C clone, along came Relic's free-floating 3D space masterpiece. Truly different to play, it looks like the cover of a Frederick Pohl novel.

048



## Ultima Online

**Released:** 1997 **From:** EA

The second best MMORPG in the world. Considered 'friendlier' than EQ, since the developers seem to have made it fun, instead of merely profitable. You can even build your own house and play dolls.

047



## Tribes 2

**Released:** 2001 **From:** Vivendi

For those who consider Quake 2 and UT2003 to be too lowbrow, this is the team-based FPS of choice. Lots of tactics, lots of different game modes, people obsess over this game like few others.

046



EVICTED!



GIANT COW

Well, this is all bullshit that's all I can say. How a misogynistic cow beater like Duke manages to stay in the list for years and I get thrown out right away. Well, you know, I'm sorry I couldn't be what people wanted me to be. I'm sorry I spat my cud in the spa. I'm sorry I drank all the Crownies, but honestly, fuck you and fuck your bullshit list.



**EVICTED!**



## KYLE KATARN

Look, I'm not bitter. I was only there for Lara the whole time anyway, so when she got evicted I was ready to be nominated, I was ready to leave the list. We had something beautiful in there, Lara and I did. And after she was evicted, sure she got back with her rich Lamborghini driving boyfriend, but you know what a car like that is a substitute for, right? This? Oh, this is my new extra-long lightsaber.

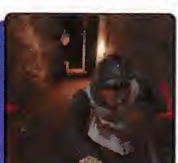


**EVICTED!**



## ATRUS

I think the thing with the list is that everyone is from a very particular kind of background, you know? They like to party, they like flashing lights and loud noises, and me, well, I'm more introverted. I was an experiment on the producers' part, and that's fine, I can live with that. But don't write me off as boring, I'm interesting. I've read Plato, and I understand it. Do you want to see my Mike Oldfield album collection?



# 045

## Kohan: Ahriman's Gift

Released: 2001 From: Strategy First

Epic-scale RTS, you control hundreds of units at once instead of a small handful. Includes heroes, a detailed research tree and plenty of violence. A refreshing take on the stale RTS genre.

# 044

## Haegemonia

Released: 2002 From: Wanadoo

Some complain Homeworld is too 'strategy lite' and Master of Orion 2 is too 'turn-based heavy'. This game combines the best of both, in the most detailed real-time space empire builder ever.

# 043

## Morrowind

Released: 2002 From: Bethesda

A defining moment in this 3D FPS/RPG is when one of the NPCs steals the player's shoes. Quest on! Full of mind-numbingly irritating side quests, this is one big game.

# 042

## Sim City 4

Released: 2002 From: EA

Latest in a proud line of management sims, SC4 adds 3D graphics, a few welcome tweaks to the gameplay, and system requirements to make you weep.

# 041

## Grim Fandango

Released: 1998 From: LucasArts

Adventure's last hurrah? Set in the land of the dead and following the misadventures of a skeletal travel agent, it's weird, but it's damn good.

# 040

## Warlords Battlecry 2

Released: 2002 From: Ubi Soft

Proudly Australian made and proudly old school, this fantasy RTS reminds us why the genre is so enduring. All the goodness of turn-based at a frenzied pace!

# 039

## Freespace 2

Released: 1999 From: Interplay

THE space shooter when the genre was in its heyday. Awesome graphics, awesome gameplay and nebula effects to rock your galaxy. Those nasty Shivans have it coming to them.

# 038

## IL2 Sturmovik

Released: 2001 From: Ubi Soft

Like many period flight sims, this has gathered a cult following thanks to an excellent flight model, unusual setting, and plenty of tank busting! Plus, heaps of the pilots are chicks.

# 037

## Mechwarrior 4 Mercenaries

Released: 2002 From: Microsoft

What's better than bossing around a whole squad of 50t killing machine? Why, piloting your own in a spectacular 3D and making money blowing up buildings! The ultimate cure for small man syndrome.

# 036

## Unreal Tournament 2003

Released: 2002 From: Atari

A definitive deathmatch FPS, pushing the limits of graphical frippery and adding groovy new game modes such as Bombing Run. Unfortunately, you need God's own PC to enjoy it.

# 035

## Arx Fatalis

Released: 2002 From: JoWood

Does the FPS RPG thing like Morrowind, just much better. Better quests, better skills, better NPCs and, of course, a goblin in a cage. That's worth a lot in our book.

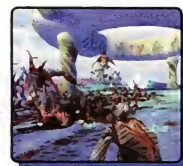


## Sacrifice

Released: 2000 From: Interplay

RTS with a difference. You are on the battlefield, a psychedelic wizard, controlling bizarre creatures in an attempt to defeat other psychedelic wizards. Any questions?

034



## Grand Prix 4

Released: 2002 From: Infogrames

Another in the proud series, another triumph. Excellent simulation, great selection of tracks, solid gameplay. If they include a career mode next time, GP5 might find itself higher on this list.

033



## Freedom Force

Released: 2002 From: EA

We were promised a slew of superhero games in 2002, but this was the only (decent) one to reach the shelves. Made here in Australia, squad based strategy has never been so... wacky!

032



## Raven Shield

Released: 2003 From: Ubi Soft

The second best Tom Clancy iteration. While singleplayer is fantastic, multiplayer is nothing short of superb. Leaves Counter-Strike for dead, if you want tight realism and one-shot kills.

031



## Baldur's Gate 2

Released: 2000 From: Interplay

Very nearly the best classic D&D RPG, beaten only by Neverwinter Nights. Big gaudy sprawling story, heaps of classic monsters and spells spilling out the arse. Also includes a hamster.

030



## Starcraft

Released: 1998 From: Vivendi

The RTS that sucked more time from the nation of South Korea than any other. Impeccable balance, artfully designed units, lean and functional graphics. And man are those Zerg ugly.

029



## Championship Manager 4

Released: 2003 From: Eidos

How can a game with little animation and nothing but screens of stats hold anyone's attention for six hours at a time? How can clicking once every three minutes entertain? Ask our Editor.

028



## C&C Generals

Released: 2002 From: EA

Will the stream of C&C games ever end? Unlikely. Is this the best? So far. One of the few 3D RTSs to really work properly with a lean and hungry new style. Savage system reqs though.

027



## Dark Age of Camelot

Released: 2001 From: Vivendi

The best MMORPG in the world. Why? Clans. Group up with sixty or seventy others and assault entire castles. Topple entire countries. All bake bread together and dance around the maypole. Fruits.

026



## Ghost Recon

Released: 2002 From: Ubi Soft

Still the best Tom Clancy iteration, with outdoor combat and a gritty military feel much better than that police rubbish. First Clancy game to include a decent planning stage, fast and slick.

025



## The Sims

Released: 2000 From: EA

The game that turned EA from merely a big publisher into Gigantor, Swallower of Worlds. Trundle around the house looking after your simulated person. Go to the toilet. Have a shower. Die. Repeat.

024



EVICTED!



RAYMAN

Duc Nukem crie comme une fille! Kyle Katarn dort avec un nounours! Lara Croft est une lesbienne! Bâtards!

EVICTED!



HORNY

Hey, look sister, if the list can't handle who I am then that's the list's problem, not mine. I'm proud to be what I am. They said I was freaky, I say I was more in touch with the true me than any of them. Especially that Duke. "Not there, Horny!" he'd shout. Please, darling, don't dream it, be it.

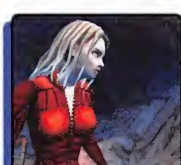


**EVICTED!**



**ALICE**

Life really is all about disappointment. I can live with the disappointment. I can live with the pain. Black is the colour that I wear, because black is the colour that is all around me. In fact, the only thing that really smarts is that Katarn mooned after that Croft bitch the whole time and never even looked at me once. I didn't shower in my undies, but I showered in my boots though.



**023**

## Diablo 2

Released: 2000 From: Vivendi

Never has RSI been more fun. Clickety click click. Seriously though, it's the unparalleled character development and collectibles that make Diablo 2 great. Like Starcraft, it rules South Korea. Zany!

**022**

## Hostile Waters

Released: 2001 From: Interplay

A forgotten classic. Based loosely on that even more forgotten classic, Carrier Command. Control an entire futuristic aircraft carrier, launch scouts, fighters, salvage ships, and kick pirate buttock.

**021**

## I-War 2

Released: 2001 From: Infogrames

Proving space shooters can be intelligent simulators. Rides on the success of its predecessor, albeit with more bugs. Patch it up though, and this is a tight, character driven sim.

**020**

## Rise of Nations

Released: 2003 From: Microsoft

RTS with the beef of Civilization! Or at least, Civ Lite. The history of the world in one hour is its claim. Combines elements of turn-based with RTS for epic-scale fun.

**019**

## Medal of Honor: Allied Assault

Released: 2002 From: EA

A WW2 shooter without zombies, electro-beasts or Hitler in a powersuit? Crazy! And yet, it works better than RTCW and Ironstorm combined. A FPS triumph, that actually does justice to history.

**018**

## System Shock 2

Released: 1999 From: EA

Easily the scariest game ever for PC. Lost alone in an abandoned space ship save for pipe-wielding zombie freaks, toyed with by a psychotic AI and forced to dance for cyber modules. Freaky.

**017**

## Grand Prix Legends

Released: 1998 From: Sierra

Best racer for the PC. A period Grand Prix game, set when cars were cigar tubes and wheels were stolen from bicycles. Speeds were lower, but crashes even more spectacular. Best raised fist ever!

**016**

## Neverwinter Nights

Released: 2002 From: Infogrames

Amazing potential for user created content, awesome technical achievement, inexplicable swords of +15 damage lying in ditches. It was #1 last year but this year sinks, due to lack of interest.

**015**

## Quake 3

Released: 1999 From: Activision

It's testament to id's prowess that this four year old engine can still look cutting-edge when applied to newer games. Leanest deathmatch shooter in the business, and still a tournament staple.

**014**

## No One Lives Forever 2

Released: 2002 From: Vivendi

Speaking of FPS, this is one of the wackiest. Play a slinky female spy and camp your way through 60s spycraft pratfalls using your C4-enhanced compact to blow up fat Russians. With Ninjas.

**013**

## Thief

Released: 1998 From: Edios

Or, as most of our correspondents call it, The If. Coined the term "sneak-em-up" and even has missions where killing people isn't allowed. Set in a medieval industrial society, has the best story of any PC FPS.



12

## Warcraft 3

Released: 2002 From: Vivendi

Blizzard's answer to C&C Generals. Or possibly the game C&C Generals answered to. Anyway, solid balance, dependable technologies, undemanding 3D engine. This is safe gaming with enough subtle new touches to bring a few new things to a familiar genre.. It's also good.



## Half-Life

Released: 1998 From: Sierra

11

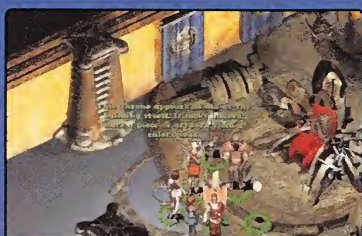
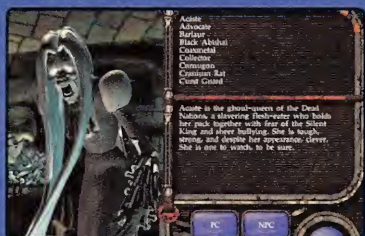
PC gaming would be a lonelier place without Half-Life. Started life as a Quake total conversion, then gathered some kind of momentum behind itself and turned into the greatest pure shooter for the PC. We're looking forward to the sequel very much.

10

## Battle Realms

Released: 2001 From: Ubi Soft

It takes a lot to stand out as an RTS against the big established brands like Warcraft and AOE. But Liquid managed it, creating a Ninja-flavoured strategy title different enough to inspire the likes of Blizzard to rip off various core concepts.



## Planescape: Torment

Released: 1999 From: Interplay

09

Still the best. All about characters - 10,000 lines of dialogue equals real people. Their motivations are complex. Their histories, entangled. We're still waiting for someone to follow in the Nameless One's footsteps.

08

## Age of Mythology

Released: 2002 From: Microsoft

Take the most successful RTS series in the world and add gods. That's AoM, full of detail and thanks to a choice of minor gods, different each time you play. God powers add spice to the mix. Tasty gaming.



## Operation Flashpoint

Released: 2001 From: Ozisoft

07

Perhaps the best military shooter, offering multiplayer gaming with helicopters, tanks, trucks and heaps of weaponry and a long view distance. Plays fast and loose with Cold War history, but who cares!

06

## Counter-Strike

Released: 2000 From: Sierra

Originally released as an unsupported mod, it proved so popular that Sierra snapped up the developers and turned them into millionaires. Played by more nerds and South Koreans than any other game, CS rides roughshod over all competitors, except one...



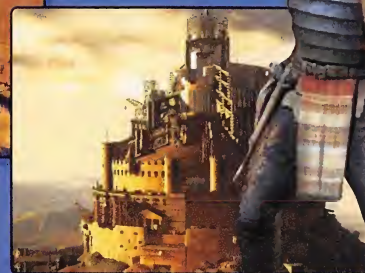
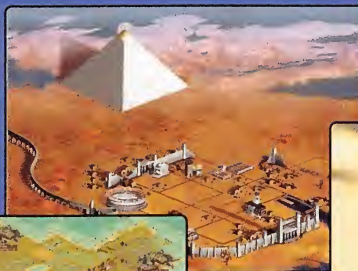


05

## Civilization 3

Released: 2001 From: Infogrames

Behold, the monolith. The most massive, the most detailed world simulation in the business. You know how to play - you've played it before. But the enhancements make it a sweeter experience. It indulges the god in all of us.



04

## Deus Ex

Released: 2000 From: Eidos

If we were allowed to ignore public opinion and what people are actually playing, this would still be our number one. The ultimate blend of action, RPG and adventure. The best mission structures. The best NPCs. The best choices. Play it.



03

## GTA Vice City

Released: 2003 From: Take 2

If life is about choice then gaming should be about freeform roaming around a living city doing whatever the hell you want especially stealing cars. GTA 3 Vice City answers this prayer. Wacky missions, wacky whackings, and jumping buses onto trams.



02

## Medieval: Total War

Released: 2002 From: Activision

If PC is supposed to distinguish itself from consoles through epic, detailed, intelligent gaming then this is the perfect example. Battles are massive. No really, massive. Strategy is deep. Lances are prickly. And the ground is soaked in blood.



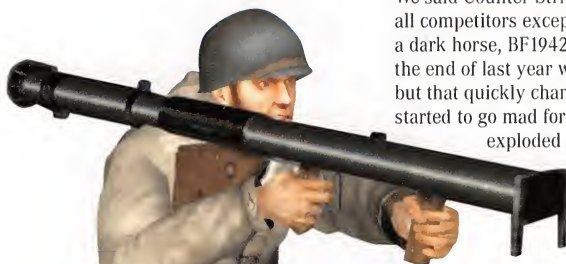
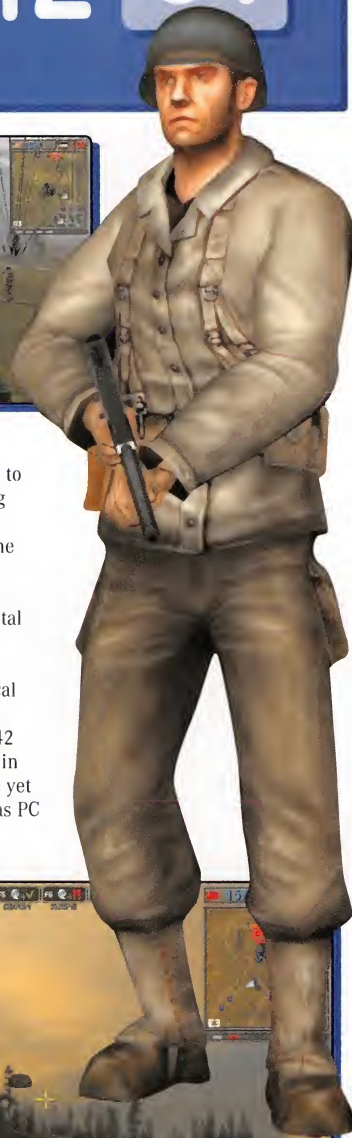




# Battlefield: 1942

01

Released: 2002 From: EA



We said Counter-Strike rides roughshod over all competitors except one. This is it. A bit of a dark horse, BF1942 was released toward the end of last year with not much fanfare, but that quickly changed when the kids started to go mad for it. Massive displays exploded in shop windows.

Games like The Sims and anything on console were swept away in a BF1942 buying frenzy.

It was followed by a playing frenzy - Unreal Tournament 2003, released at about the same time, quickly found its servers emptying as players turned to sweet, WW2 cartoonish combat. Dominating spawn points and stealing bombers became the

definition of gaming, and a whole vocabulary of new words were invented to scathingly howl down anyone exploiting BF1942's many idiosyncrasies.

Imagine piling all your mates into the back of a bomber and flying low over a series of islands, raining death on your newbie foe. Imagine parachuting into vital choke points, seizing hardware and dominating the map. That's BF1942.

It seems gamers today want historical curiosities over modern marvels, tight teamplay over deathmatch chaos. BF1942 answers this want admirably, resulting in the most accomplished multiplayer title yet seen on PC and cementing its position as PC PowerPlay's Number One game.





# IN REVIEW



**O**h, lordy. I knew I shouldn't have pushed for that 4GHz overclock. Now look what I've gone and done - I've somehow managed to rip a hole between our dimension and the Magazine dimension - you know, that place where everybody is a 2D printed image, and God is this old guy smoking a ciggie over a rusting printing machine. In the Magazine Zone, instead of speaking when you want to say something, a sentence flies out of your unmoving mouth and lands on a page within the magazine that the big guy chose as your home. And it appears He thought I might fit in at PC PowerPlay, one of the coolest hangouts in this dimension. Too bad I didn't make it into the German Shaved Cheerleaders Doing It Greek Style magazine, but I probably would have found the language barrier a little hard anyway. That's supposing we managed to do any talking...

Oh well, I'm sure I'll fit in here. When it comes to games, I'm addicted. I'm talking girlfriend-is-actually-threatened-by-the-relationship-between-me-and-my-beautiful-PC addicted. I'm talking last-thing-on-my-mind-before-I-fall-asleep-are-ways-I-should-have-approached-the-Mig-in-the-LO:MAC-beta addicted. I love games, I shit you not. When I think about being a granddad far in the future,

it's not my grandchildren that I imagine - it's the games they'll bring me for Christmas.

And for someone who lives, eats, breathes, craps and shags games, PC gaming is where it's at; if you want to play the cutting edge in games, the consoles just can't compete. And to play the cutting edge games, you need cutting edge hardware. As a result, I've turned into a bit of a tweeker over the last five or so years, continually upgrading my hardware so that I can play with all the eye candy set to eye bleeding levels. Much to the dismay of my wallet. Which is probably why the Print God has given me the position of Resident Tech Dude™ at PC PowerPlay.

It's my new mission in life to make PC PowerPlay's hardware coverage as brilliant as you lot expect it to be. I'm also going to be expanding PC PowerPlay's horizons a little, but fear not, we won't be reviewing boring beige IT gear. Instead, we'll start to dabble in all forms of PC entertainment, from PC based home theatres, to editing your own digital movies on the PC. However, the focus will still remain firmly on gaming hardware. We're also going to be more rigorous in our testing methodology (dang, that word makes me feel smart), so that you can be sure our reviews are the finest you'll find.

So sit back, relax and enjoy the additional Bennett scent that now permeates through PC Powerplay, much like the smell of anchovies you'll find on a Super Supreme. But not so stinky. Except after curry...

**Bennett Ring**  
Deputy Editor,  
[bennetr@next.com.au](mailto:bennetr@next.com.au)

## PCPP TECH REVIEW SYSTEM

Here at PCPP, we scour the land for the latest in PC technology, then ruthlessly test it in the decentralised hardware democracy that is the PCPP Tech Bunker. A hardware review is much more objective than a game review - there are quantifiable elements to most bits of good kit, and the benchmark, as always, reigns supreme. We take into account the performance of a product first, but price is also a factor. We provide reviews of hardware you can expect to afford, as well as the occasional item that's too cool not to review.

All our review products are compared against at least one leading brand to give a meaningful indication of performance and what you can expect should you actually buy the thing and put it in your precious machine.

Each product is rated out of 100, where a higher score indicates a better balance of price and performance. For items where the prices is low and performance is not relevant, such as modding accessories, a more subjective analysis of the product is undertaken, where we use our experience with such items to determine whether or not they'll help make your machine look cooler or just plain tacky.

Finally, those products that are 'must have' items receive the coveted PC PowerPlay Gold award. This award is reserved for hardware that is serious kit, indeed, and will improve your PC so it's well worth the investment.

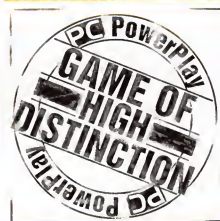
### GOLD AWARD



The ultimate accolade. A game that receives a Gold Award is an essential purchase, and the only excuse for not owning it is either not having a powerful enough PC, or not having a PC at all. Or arms. It represents a new direction in gaming, a new benchmark against which all others will be measured. It defines its genre, or creates a new one. It is gaming. You must own it.

**90+**

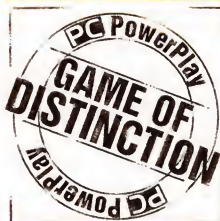
### HIGH DISTINCTION



This is the finest in gaming. A fresh concept, a perfect execution, a meaningful extension to a tried and tested format, one or all of these are required for this score. We strongly recommend the purchase of each High Distinction game, but extremely fussy gamers may want to skip those HD games that don't also receive Gold Awards.

**85-100**

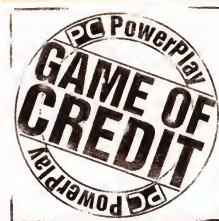
### DISTINCTION



An intriguing new concept or a bold new direction that manages to pull its new trick off with a reasonable degree of flair. You will be impressed, at either the graphics, the gameplay or some other new element that you may not have encountered before. Or perhaps this is a familiar gaming concept, but one executed so well it's almost - but not quite - an essential purchase.

**75-84**

### CREDIT



Solid, playable, largely bug-free, entertaining and maybe even a bit unexpected, these are the hallmarks of a game of Credit. You may have seen it all before, but you won't mind, because a Credit game does what it says on the box - it plays well and it keeps you hooked. An essential purchase? Not necessarily, but worth consideration.

**65-74**

### PASS



A game that receives a pass is playable, but its concept may be flawed, its extras may be lacking or its graphical enhancements may have fallen off somewhere in a lengthy bug-fixing process. And bugs there may be, although in the end the game will, as we say, work. Purchase if you're curious, but discerning gamers will probably look for something more substantial.

**50-64**

### FAIL



There are more than 5000 games released each year. Some are gems. Some are merely unremarkable. Others are nothing more than a shameless grab for cash. Graphics will be rudimentary and gameplay will be worse. If you see someone considering a game that has failed, gently take them by the elbow and hurl them out of the shop. It's your duty as a good citizen.

**0-49**



# GAMES

## 78 Game of the Month

Flight Simulator 2004: A Century of Flight

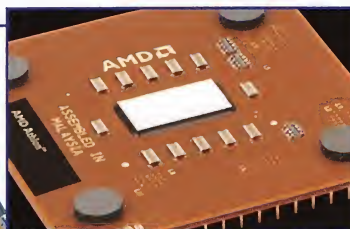


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# TECH

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# PlanetSide

A MMORPG FPS with the potential to knock out Everquest



Developer: Sony Online Entertainment ■ Publisher: Sony Online Entertainment ■ Distributor: Ubi Soft ■ Price: \$99.95 ■ Rating: M15+ ■ Available: Now

## SYSTEM

### NEED

1GHz CPU  
256MB RAM  
64MB video card  
3GB HDD  
56k modem

### WANT

2GHz CPU  
1GB RAM  
GeForce 4 Ti4200  
DSL or better

### MULTIPLAYER

Only

### ONLINE

[vanusovereignty.com](http://vanusovereignty.com)

The Vanu race transcended its mortality and touched the white-hot light of destiny. The Vanu knowledge will deliver us from ignorance. We are the shepherds of evolution, the harbingers of progress. We lead toward the light. And don't you forget it.

**U**ntil now, playing a first person shooter online has been a fairly pointless affair. Sure, you get to kill lots of people, blow up some stuff and hopefully finish at the top of the frag count, but when you log off it's all for nothing - the next time you go online nobody will ever know you single-handedly fought off 27 twelve-year olds to capture that last flag on Wake Island. Contrast this to MMORPGs. You log on, kill lots of creatures, blow up some stuff, and voilà, your character has now levelled up to 17+ Super Paladin Bad Ass, and you are finally able to wear the Extreme Velvet Ear Muffs of Pain that you looted several weeks ago. Next time you play, you're more powerful than ever, and you can actually feel the newb controlling the feeble level three apprentice standing before you trembling in awe. This provides an incentive to keep playing the game, as the time you spend in the game world is rewarded by increasingly cool stuff. Now, imagine melding the action of a first person shooter with this concept of persistent character development. You've just imagined PlanetSide.

Like any MMO, PS wasn't complete when it launched. We'd say it's around 80% done, but it's definitely in a better state than most MMOs at launch. There were very few show stopper bugs, and those that did crop

up were promptly squished under the collective heel of the zealous developers.

When you first fire up PS, you get to join one of around six different servers. None of which are located in Australia. Grrrr - more about that later. The best ping you'll get from Australia on broadband is around 200-250ms.

Once you've setup your account, which is around \$20 per month, and selected which server to play on, you're prompted to join one of three empires; the Terran Confederate, an organisation rooted in the government of the past with guns that go bang faster than the rest, the New Conglomerate, a revolutionary group (read, Red Commie Bastards) who has the most powerful weaponry, and finally, our favourites, the Vanu Sovereignty, a society based on the use of Alien technology, whose weapons favour manoeuvrability over firepower. But the real reason we just like them is because they wear purple flares.

Each race has access to a common pool of weaponry and vehicles, as well as empire specific equipment. Thanks to this, each race has a distinctly different feel to it, and requires the use of slightly different tactics. The empires are balanced quite well, although many have complained that the Vanu weapons aren't powerful enough, but we feel their increased speed more

than makes up for this.

A server is made up of 13 continents, and all of these have a different environment to the others, from snowy wastelands to desert flats, and contain around 15-20 different bases, each of which has a different purpose. Bio labs allow you to install implants into your character, while Dropship bases are the only place on each continent where you can purchase the Galaxy troop transport ship. The goal of the game is to capture these bases, and the Empire with the most bases under its control at the end of the day is declared the winner.

When you first begin, your character is the virtual equivalent of that sniffing mamma's boy, Frank Spencer, who said "Betty" heaps in that crappy old TV show. Yes, a total and utter pussy, whose only role on the battlefield is to get shot in the head. Rightly so. However, as you start killing things and capturing bases, you'll be awarded Battle Rank points - which is just a macho way of saying experience points. Accrue enough BR points and \*BING\*, you'll advance up a battle rank. You are then awarded certification points, which can be used at certification terminals to upgrade your character. There are a wide range of weapons, skills, vehicles and suits that can be accessed, but don't expect them





Meet the MAX Armour, one of the most formidable uniforms in the game



Potato looking for Squadmembers

The stealthy infiltrator suit; obviously turned off

## FOLLOW THE LEADER

Commanders have a similar experience system to Battle Ranks, but it's ingeniously titled Command Ranks. The more objectives your squad captures, the more CR points you are allotted. As you increase in Command Rank, more leader powers are opened up to you, such as drawing diagrams on your squad mate's maps and communicating with other squads on faraway continents. And due to the older average age of PS players, the map drawings aren't all child like scribbles of penises, unlike Raven Shield's phallic obsessed map doodlers.

## Thanks to the innovative character upgrade system, PS is as addictive as a hybrid of pure crack cocaine and crystal methamphetamine injected directly into your brain

### DRIVING MISS DAISY CUTTER

There are around 10 different vehicles waiting for your certification points, from tanks to ground attack aircraft. These are surprisingly simple to control, but can be the deciding factor in a closely matched battle, especially in large open areas. If you want to be invited into a squad as soon as you broadcast LFS (looking for squad) on the chat channel, the Galaxy troop carrier certification is highly recommended.

reliant upon the twitch factor, it's still a problem, especially when you're in an enclosed area like a base.

It appears this lag isn't caused just because Australian players are dealing with high latency - even the US players are complaining about the shocking lag when lots of people are in one area. A network code rewrite is in progress, which, according to one of the developers who has this unenviable task, is like replacing the engines on an aircraft... while it's in flight. Being a FPS, this issue of network code is crucial to the ongoing success of PS. Thankfully, it only occurs when the servers are packed, which for Aussie players is only on weekends. Which brings us to the other major problem with PS. Due to the time difference between Australia and the US, the PS servers can be rather empty during weeknights, making base capturing a tedious and lonely affair. The only solution to this would be if Sony Online Entertainment decided to grace the Asia Pacific region with its very own server. For \$25 a month subscription fee, this really isn't a big ask.

PS has the potential to be massive. We're talking EverQuest massive. However, we can't help but feel slightly pissed that SOE didn't deem Australia important enough to warrant its own server, and the issues with lag make the game a sometimes frustrating affair. We're talking about a massively multiplayer online game though, so you never know what might be around the corner.

Bennett Ring

to come easily. And every few Battle Ranks you'll be awarded an implant, making you even scarier to the guys on the business end of your boom stick.

Thanks to this innovative character upgrade system, PS is as addictive as a hybrid of pure crack cocaine and crystal methamphetamine injected directly into your brain - but thankfully, you probably won't need to mug grannies to sustain a PS habit. Knowing that each victory actually counts for something is a driving force that compels you to stay online for as long as your piddly 3GB cap will allow. It's something that other first person shooters simply don't have, but no doubt will become the norm after the completion of PS.

Building a squad with a maximum of nine other players is a simple matter of inviting enough solo players. Being a part of a squad is the easiest way to successfully hack (capture) an enemy base. Then there are outfits, which are comprised of many



**FOR**  
Balanced empires  
Fast-paced action  
Character upgrade  
Excellent motivation

**AGAINST**  
No Aussie server!  
Net code needs work

**OVERALL**  
You'll love it until the shonky network code becomes frustrating. Fingers crossed the devs soon fix this.

80





# Star Trek Elite Force 2

Sexy alien women in bikinis? It must be Star Trek

Developer: Ritual Entertainment ■ Publisher: Activision ■ Distributor: Activision ■ Price: \$89.95 ■ Rating: M15+ ■ Available: Now

## SYSTEM

### NEED

600MHz CPU  
32MB DirectX  
128MB RAM  
16-bit Sound card  
1.3GB HDD

### WANT

1.4GHz+ CPU  
GeForce3 or better  
256MB RAM

### MULTIPLAYER

Yes

### ONLINE

[www.kit.org](http://www.kit.org)  
Heghlu'meH QaQ  
jaivam. If you  
understood that, you  
can obviously read  
Klingon... and need  
a girlfriend.

**A**fter seven long years of trekking through the Delta Quadrant, the crew of the Voyager is finally home in Federation Space having finally destroyed the remaining Borg sphere in the process. At home, the crew is split up and sent to different ships and given jobs fitting their unique skills learned from the years of making do in the inhospitable Delta. The Hazard Team is broken up and given jobs far below their skills by an insipid official who firmly believes the tactics and doctrines of the team fall far below those expected of Starfleet officers. Alexander Munro, leader of the Hazard Team is given a job teaching small unit tactics at the academy. After two years of what could only be described as monkey work, Captain Picard of the Enterprise, who personally believes that the Hazard Team would be perfect to aid in his ongoing mission to explore new worlds, saves Munro from a life of relative luxury and teaching. As fate would have it, as soon as

Munro and his crew are onboard, the Enterprise and everyone on it are swept into danger. It would be fairly dull if all they did was cruise around the galaxy looking at happy things, now, wouldn't it?

## We come in peace

For those of you unfamiliar with the first game or lacking knowledge of Trek, don't be afraid of feeling out of their depth. Elite Force 2 is all about action and, although the plot is really very strong for a first person shooter, it involves new races and plotlines, so there's no need to have any particular Star Trek knowledge before playing - as long as you know that the Enterprise crew are the good guy's you're set. Although each level over the 12 vast areas features a number of different objectives including tricorder puzzles and a few jumping puzzles, Elite Force 2 is more concerned with the battle between A and B. Players will frequently be swarmed by enemies in a nearly Doom/Serious Sam-

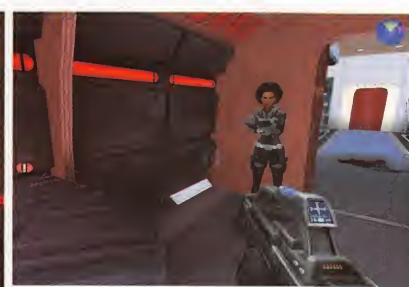
esque fashion making for some very frenetic combat. Each different race has a distinctive AI, which makes battles nicely varied. The Idryll are an athletic race and employ many dodges and jumps as opposed to Klingons who favour a more direct, in your face approach.

Each level also feature at least one massive boss monster, leading to some wonderfully old school firefights. Each of the bosses follow their own AI attack pattern, forcing the player to pay attention and look for weaknesses rather than simply blasting hell out of things. Multiplayer definitely looks promising, but because the game is yet to be released, it makes finding a game to join rather hard. Multiplayer maps range from the average - fighting through the cramped corridors of a destroyed starship - to the brilliant. One

**Each of the boss monsters follow their own AI attack pattern, forcing the player to pay attention and look for weaknesses rather than simply blasting hell out of things**







## BODY PHYSICS

Elite Force 2 doesn't really do anything to dispel the idea that Star Trek nerds are socially maladjusted morlocks living in their parent's houses and fantasising about curvy women in tight fitting body suits. Every female figure in Elite Force 2 could be politely described as buxom. Actually, buxom doesn't quite cut it, to put it more bluntly, each female model has strange new worlds affixed to her chest, thrust out to tempt the rest of the crew to go where no man has gone before. Thankfully, there isn't any jiggle physics in the engine otherwise the game would degenerate from being a first rate shooter to second-rate titillation.



map sees the players battling it out on the magnetised hull of the Enterprise. The map is mostly just a slightly curved plane criss-crossed by deep channels, but the real genius comes into play with the Z-axis. The zero gravity allows players to literally fly around the map, only slowly being pulled back to the hull by the magnetic field.

With any luck, Elite Force 2 will be the last big game to be released built on the Quake 3 engine, not because it look bad, quite the opposite, in fact. Elite Force 2 is one of the best looking games ever to be released using the venerable engine, and so to be the last game using it would be a fitting swansong. For the most part, the models are excellent, very detailed and beautifully animated. Every now and then, the player will notice some strange animations - sometimes characters running in cutscenes look as though they're straight from a supermarionation show such as Thunderbirds. These little glitches are the exception, not the rule.



Character faces are truly outstanding, showing a great deal of character and emotion for an engine that doesn't easily support that much facial animation. Terrain textures are generally good, but do tend to become a little repetitive in many of the levels. Elite Force 2 runs wonderfully smooth (60+ fps at 1280x1024) on a mid to high-level machine (Athlon 2000+, 512MB RAM, GF4 Ti4200) with all of the effects turned up to max. 60+ frames per second may not sound too impressive, but when you see some of the weapon, particle and lighting effects combined with around 10 or so figures on screen at once you're in for a real treat.

## Steward and Combs

The voice acting is uniformly excellent, if somewhat slightly overacted. Patrick Stewart provides the voice of Picard, so you know that anything he says will sound more important than the voice of god. Other characters are voiced by such genre stalwarts as Jeffrey Combs (Reanimator, more Star Trek characters than you can count) and Tony Todd (Candyman, X-Files). Thankfully, Jeri Ryan hasn't lent her hand to any of the characters, though the vast majority of female bodies do seem to

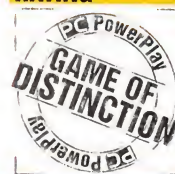
be based on her slightly curvy body.

One of the real treats in the game is exploring the Enterprise between missions and listening in on conversations. Crewmembers talk about all manner of things ranging from the exploits of Munro and the rest of the Hazard Team during their last mission to the carnivorous plant life of Andoria. It seems as though as much attention has been paid to these incidental conversations as to the overall plot, effectively serving to immerse the player into the wonderful world of Trek. During a number of the cutscenes, players will be offered a few branching conversation choices. Whilst the player's choice doesn't directly affect the game they do influence cutscenes, especially during the love interest subplot - does Alex want the buxom and strangely demure blonde, bikini-clad Idryll scientist or his feisty 21C Telsia?

Star Trek Elite Force 2 is brilliant fun featuring fast paced shooting action and a tight plot. In all respects, it's superior to the original Elite Force but still fails to capture that certain nameless something that elevates a great game to being an absolute classic. At any rate, Elite Force 2 deserves the attention of any fan of FPS gaming.

Daniel Wilks

## RATING



### FOR

Looks great  
Excellent voices  
Well-paced  
Zero-G multiplayer

### AGAINST

Missing something  
Strange animations

### OVERALL

Elite Force 2 is sure to please, but leaves you wanting a little more

81





# Gothic 2

Ich bin eine Paladin

Developer: Pyranha-Bytes ■ Publisher: JoWood ■ Distributor: Red Ant ■ Price: \$89.95 ■ Rating: M15+ ■ Available: Now

## SYSTEM

### NEED

P3-700  
Windows  
98/2000/XP  
256MB RAM  
32MB video card  
DirectX sound card  
2GB HDD

### WANT

P3-1GHz+  
512 MB RAM  
64MB video card  
DirectX sound card

### MULTIPLAYER

No

### ONLINE

[darksites.com/souls/horror/hauntedont/](http://darksites.com/souls/horror/hauntedont/)  
If you like having sweet nothings whispered in your ear and happen to be in Canada, then check this out. It's a haunted house that used to be owned by an infamous Ontario gangster in the early 1960s.

If you're one of the lucky Australian RPG gamers who got the chance to play Gothic, give yourself a pat on the back for being one of the few to find something of a classic RPG. If you didn't get a chance to play it, don't feel too bad - for some reason we can't quite fathom, Gothic either didn't receive an official Australian release or was only sold from a seriously limited number of stores. Whatever the case, anyone who loves RPGs should rush out and get themselves a copy of Gothic 2, a third person RPG in the vein of Morrowind with what is one of the best combat systems ever devised.

Although playing the original game isn't truly necessary to enjoy Gothic 2, a little background information is essential. Gothic is about a nameless convict stuck in the Valley of Mines behind a magical barrier fighting to free himself, bring down the barrier and destroy the mysterious "Sleeper". After bringing down the barrier, the nameless hero is trapped in a collapsed tunnel. The events of Gothic 2 take place

immediately after the first game with the nameless hero, suffering a case of amnesia, being rescued by the well-intentioned necromancer, Xathas. Unfortunately, not all is well in the land - the war opposing the Orcs is failing and the peasants are revolting against enormous war taxes, the King is nervous and crime is rampant. To make matters worse, there are rumours of a dark army lead by dragons forming in the Valley of Mines. As is the destiny of all amnesiacs, it's up to you to build your skills, tailor your character to your specific style of play and save the world.

## Gimmicks

The amnesia gimmick is a fantastic way to appeal to people new to the series, as well as veterans. Many of the characters you meet during your journeys are carryovers from the first game. Dialogue choices allow veterans to gloss over any background information whilst new players can take the "I've suffered a blow to the head" route

and question people as if it were the first time the characters had spoken. The amnesia angle also makes it possible to play the same hero from the first game without the nearly supernatural powers he possessed by the end of the game - not only did our nameless friend forget all the friendly faces, he also forgot all of his skills. The cave-in also destroyed his equipment. Convenient, no?

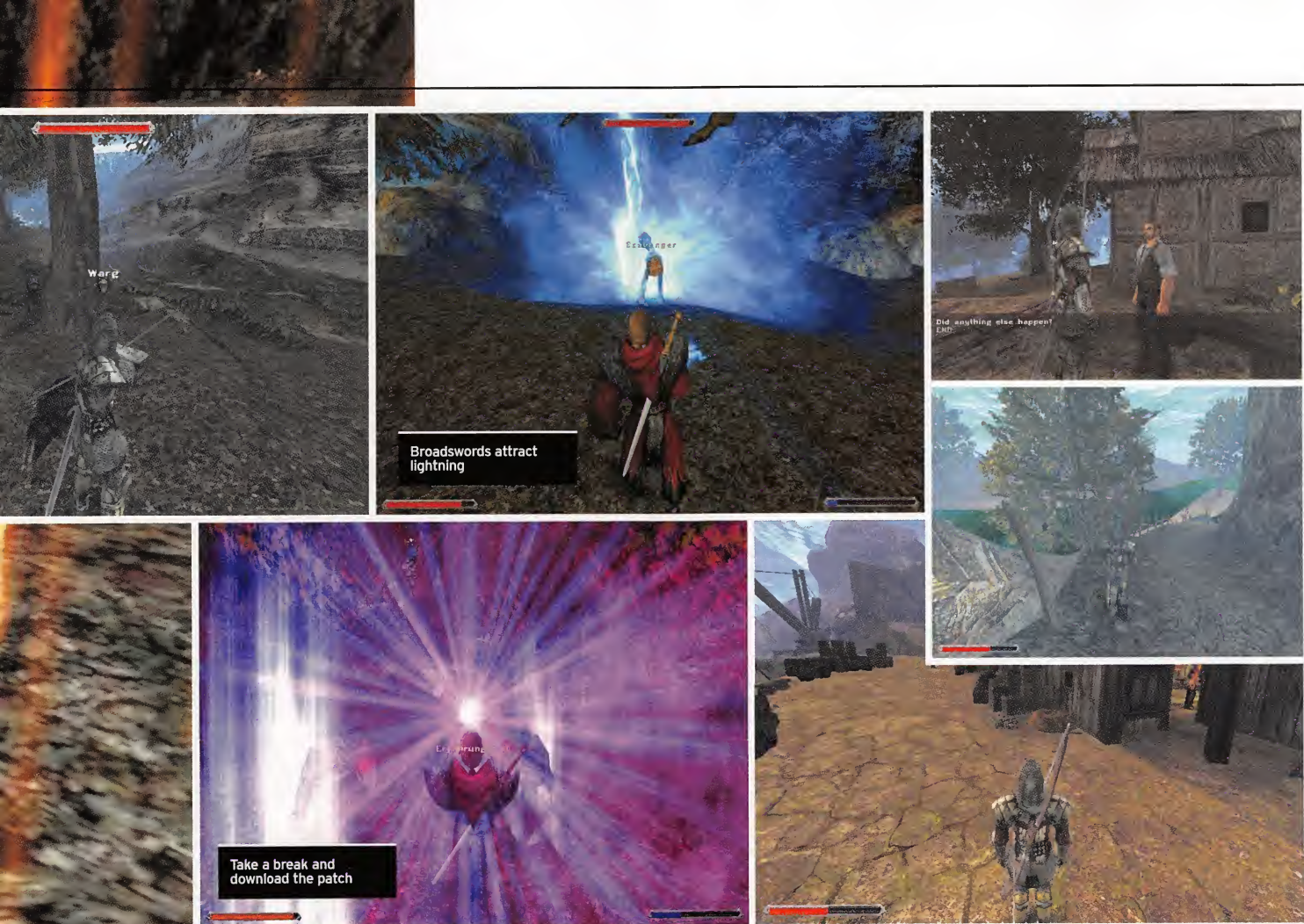
Rather than choosing a class at the beginning of the game, Gothic 2 allows players to tailor their character according to skill and statistic increases. Later in the game, certain missions require the player to choose a faction to join - mercenaries, bandits, mages or militia to progress to the

## DAS ENDE

For the most part the translation of all of the text from German to English is successful and far better than that other JoWood German RPG, Gorasul. Occasionally, you'll come across a das or ende in a sentence but usually no worse than that. These problems become worse towards the end of the game but the text never becomes too obtuse.

**Depending on the level of skill a player has with a melee weapon, players have access to progressively more complex combo attacks**





## GOODFELLA

Every conversation in Gothic 2 has voice acting. Whilst this is a fairly impressive achievement considering the number of characters you can meet, what's less impressive is the fact that half of the characters sound like bit players from Goodfellas or the Sopranos. You know the type - good Brooklyn boys with ties to Sicily. What's even odder is the strangely anachronistic incidental conversations you'll overhear - not only do people talk about things you wouldn't expect to hear from RPG characters, they also use language that's a bit surprising - when a guardsman wins a fight, don't be surprised to see him walk up to the nearest person and exclaim, "I live for this shit!"

next part. Rather than enforce a strict set of skills and abilities, the faction joined is more about sub-quests you're given, which skill and attribute trainers you have access to and what equipment becomes available. The only faction that makes a difference in skills is if you join the mages - only they have the ability to inscribe runes (spells). All other factions must use pre-made runes or single shot scrolls.

The combat system is a fine example of how to execute action packed and fairly deep RPG combat. By clicking and holding

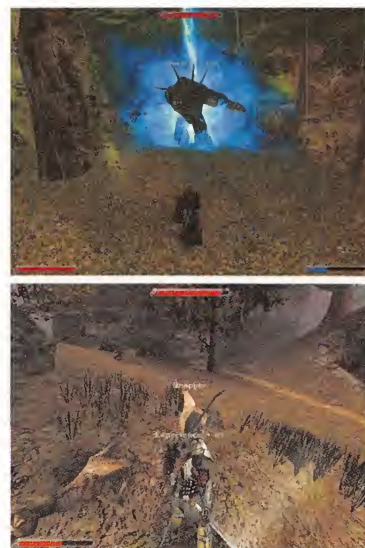
the left mouse button, players enter a combat mode (hand-to-hand, ranged or magic depending on the weapon/spell chosen) and fight using the WASD keys. Ranged combat and magic are simply a matter of locking onto an enemy and pressing the W key to fire, but the combat system really shines in hand-to-hand. Depending on the level of skill the player has with a melee weapon, players have access to progressively more complex combo attacks. Whilst the W key triggers all of the moves in the attack string, correct timing is needed to pull off the next blow in the combo. Even better is the fact that at higher skill levels the lag time between key presses is more lenient, so it's possible to delay attacks in the string to wait for an opening. Strangely enough, there is no ability to block or use a shield in Gothic 2 - combat is about distance and timing rather than turtling and waiting for a chance to attack. Whilst it is possible to beat many of the enemies in Gothic 2 by keeping up a steady barrage of assault, most named opponents require far more patience and timing to vanquish.

## No Mona Lisa

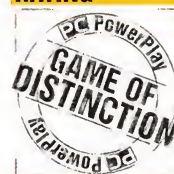
Though not as visually impressive as Morrowind, Gothic 2 is a very attractive looking game with great looking terrain, some very nice character and monster animations. The individual characters could use a few more polys to flesh them out, especially in facial details, but considering how the engine is capable of impressive draw distances, the slightly jaggy looking characters are forgivable. Unfortunately, not all is well in the land of Gothic - if there's one game begging for a patch real soon, it's this one. Frequent graphical or control glitches spoil what would otherwise be a truly brilliant game. Some of the glitches we've encountered include walking

into a forest in which all of the trees float a good two or so feet off the ground or falling through the terrain into the mysterious blue area beyond. By far, the glitch that was most annoying, though least frequent, was when wading through shallow water. The character moves slowly and deliberately, like their feet are stuck in the mud or have a broomstick shoved where the sun don't shine, or both. When getting out of the water the animation will often be stuck in the wading position until you save and reload the game. Also, you should make sure to save every time you get a new item as sometimes they mysteriously disappear from your inventory. For every good point of Gothic 2 there's a glitch that seems to offset it. If you're a fan of RPGs, rush out and buy the game, but make sure you patch it before starting to play.

Daniel Wilks



## RATING



### FOR

Combat system  
Fun missions  
Looks good

### AGAINST

Graphical glitches  
Needs control patch  
Low poly faces

### OVERALL

When it finally gets a patch you can add another 10 marks to the score.

# 76





# The Sims Superstar

Can you handle tantrums and stalkers?

Developer: Maxis ■ Publisher: EA ■ Distributor: EA ■ Price: \$49.95 ■ Rating: M15+ ■ Available: Now

## SYSTEM

### NEED

Windows  
The Sims or The Sims Deluxe  
4MB video card  
1.12GB HDD

### WANT

Sleep

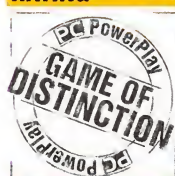
### MULTIPLAYER

Not really

### ONLINE

[www.thesims.com](http://www.thesims.com)  
Join the international community; find people within your country as disturbed as you!

## RATING



### OVERALL

Can I leave the computer now? My bladder meter is low!

80

**T**he Sims brings out the worst in me. No other game allows you to act like a complete brat, laugh at the death of your own character through pure neglect or littering a room with so much food waste that it becomes un-livable even to an animated character. Ever boarded a sim up in a room with no door??

Anyway, with yet another new expansion pack, the sixth since The Sims was released in 2000 (count 'em, that's two per year), you finally get to follow your sim as he, she or it sets off into the world of employment. A first, unless you count vegetable farming in The Sims: Unleashed.

The Sims: Superstar, doesn't change the basics of the original game, or fix any of the inherent issues (it actually adds stability problems), but it does represent the hardest challenge of the series, so far adding enough new content to make it a worthwhile purchase.

As always, letting your sim become too hungry, tired or lonely will set off their uncooperative nature, but with Superstar this takes you to an all-new level of celebrity tantrum. Of course, to be not just a star but a superstar, personal skills such as body, charisma and creativity need to be worked on continuously. A tough task while ensuring they reach a bathroom on time. Thankfully, there is assistance at hand. For the tired and twisted Sim, Superstar comes with a Butler to assist your star and at 500 simoleons a day you'll need to put in the work to afford him.

Whether acting, singing or modelling fulfilling all the requirements can be exceptionally time-consuming and I often found myself feeling like a stage mother trying to force my Sim to take on a career they weren't really interested in. Once your Sim is signed to an agency they need to visit Studio Town daily,

## HOW MANY MORE EXPANSIONS?

Reports coming from the depths of Simsville say that they have a never-ending supply of ideas for even more expansion packs. So how does one distinguish the good from the bad? Surely on the drawing board must be The Sims Redneck Cousins, Sims Samurai, The Terminator Sim, Matrix Sims, Hugh Hefner's Playboy Mansion expansion pack. But perhaps their efforts would be better put into correcting performance issues like sluggish gameplay, the camera function or the strange crash problems Superstar has when run with Windows XP. Personally, I would like to reach a point where I achieve something or can sustain a level of discipline over my sim. That aside, I'm big on the Silent Hill version of The Sims. The possibilities are truly endless.

which drains energy levels very quickly. So it's important to have as many possible luxuries at home to rejuvenate your Sim as quickly as possible. This will cost you many Simoleons. It's not until your sim makes it as a celebrity that they will start to earn money, but with the fame will come scandalous tabloid reports, which cost a great deal of money to buy before they hit the presses), as well as the possibility of being stalked by an obsessed fan if they don't maintain a good relationship with the public - all costly endeavours. While boosting over 150 new items with new gestures and dialogue options-your sims can beg for autographs, perform in a soap opera or sing in a Karaoke bars. Often sitting at home in the spa with celebrity friends can be just as



rewarding as all the new gadgets. It is amusing to see the mini Christina Aguilera and Avril Lavigne walking around, but sadly you can't tell them how you really feel about their music. For all those as musically un-aspirational as myself, The Sims Superstars will be your only chance to be a star. Australian idol eat your heart out!

Vanessa Morgan





# Galactic Civilizations

When the moon hits your eye like a big pizza pie...

Developer: Stardock ■ Publisher: Strategy First ■ Distributor: GameNation ■ Price: \$79.95 ■ Rating: G8+ ■ Available: Now

**W**ell, here's a big shout-out thanks to David Wildgoose, our esteemed Editor, for giving me a game as complex as Master of Orion 3 and only one page in which to review it. Double-pace then.

MoO3 got slammed heavily from most quarters due to dodgy AI and planetary governors that were supposed to take the burden of over-complicated management tasks off the player, but often ignored the player completely and did their own thing. GalCiv streamlines the management process, adds more interesting features, and rounds it all off with superb AI that is not only difficult to beat, but doesn't seem to cheat like AI does in so many 4X games.

While most AI simply responds to fairly basic stimulation, such as an increased military presence in a sector or the player capturing too many planets, GalCiv's AI seems to be able to determine when a Starbase is being used for trade and when it is producing military units. Sometimes, especially if the Starbase is used for both, the AI will demand improved trade condition or will launch an attack to purge the player from the sector.

Politics also plays an important role, with the player adopting a political party at the beginning of the game to give them various bonuses, such as greater sensor range or trade abilities. Later, when the Imperial government of the emerging space society is upgraded to a Republic (in turn giving more advantages and bonuses) the player must vie for control of their own Senate, and on game turns where they do not control the government, the bonuses of their political party have no effect.

While most of these 4X games take a fair while to get going, GalCiv has an accelerated starting rate thanks to the

## THE STARBASE

This is a great concept. Starbases are built to provide active improvements on different parts of the player's territory. There are strategic unique resources scattered around the galaxy that provide extra bonuses, such as extra profitable trade routes, better unit defences and attacks, faster building etc. What's more, the AI knows when you are monopolising strategic resources and will kick up a stink if it thinks you have more than its fair share. It adds definite spice and purpose to an otherwise fairly mechanical expansion of your territory.

government's ability to borrow money. When a technology has been researched, the player can save up for it as normal or borrow the cash at various rates of repayment. Is it better to drop a huge wad all at once for a battleship to meet a sudden threat, or is it better to be paying off a small amount on it for the next 160 turns?

This kind of choice combined with superior AI makes GalCiv a strong 4X game indeed. The AI is even smart enough to be fooled - you can pretend to be a peaceful trader while secretly building a

huge military presence and as long as you keep it out of your opponent's face, you may be able to get the jump on them.

However, GalCiv, for all its strengths, does look about as graphically impressive as Master of Orion 2, which is so old we gave it away free on the coverdisc in 2002. The graphics here are definitely functional rather than pleasing. Also, it's difficult to connect with the player when squid things and battleships rather than identifiable units and structures populate the universe. GalCiv does a decent job, but Civilization 3 is still a much more accessible and immersive experience.

There's a lot more in here but I've run out of space. Pick it up if MoO3 betrayed your soul or the last 4X game you played was Spaceward Ho!

Anthony Fordham



## SYSTEM

### NEED

P3-667  
128MB RAM  
8MB Video card  
500MB HDD

### WANT

P3-1GHz+  
256MB RAM  
16MB Video card  
750MB HDD

### MULTIPLAYER

No

### ONLINE

[www.galactic.com](http://www.galactic.com)  
Thermogalactic spectroscopy! At last GRAMS/AI v. 7 has been released! All our spectroscopy prayers have been answered!

## RATING



### OVERALL

4X done right, with none of the MoO3 blunders.

75





# Flight Simulator 4: A Century of Flight

Attention to detail except flies over terrain

Developer: Microsoft ■ Publisher: Microsoft ■ Distributor: Microsoft ■ Price: \$99.95 ■ Rating: G8+ ■ Available: August 2003

## SYSTEM

### NEED

P3-500  
128MB RAM  
16MB video card  
1.6GB HDD

### WANT

P4-3GHz  
1GB RAM  
128MB video card  
3.4GB HDD

### MULTIPLAYER

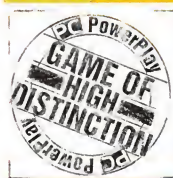
Yes

### ONLINE

[www.innerloop.com/fs4.htm](http://www.innerloop.com/fs4.htm)

Check out the game that was made for the US military with some of the best terrain.

## RATING



### OVERALL

A great product for flight enthusiasts and flight simulator fans

# 88

**C**ivilisations rise and fall, stars are born and die and all the while, deep in the seclusion of Microsoft's Redmond compound, the next installment of the long lived Flight Simulator series is always in the works. Unchallenged in the marketplace since EA attacked unsuccessfully in 2000 with Flight Unlimited 3 the FS series has gone from strength to strength with third party and fan support reaching levels the Pope would envy.

Such a massive and complex gaming environment might seem a bit daunting to any newbies interested in civilian aviation and aside from trying to entice the old hands, Microsoft has made a good effort to ease new players into the game. Everyone's favourite flight instructors, the Kings, are back from FS 2002 with even more helpful hints to guide you through middle-age and flying - if you can drag your eyes away from the delectable Mrs King for long enough.

The most obvious and impressive new feature of 2004 is its dynamic weather. This isn't just a few streaks of rain on your windshield but a massively complex simulation of barometric pressure, temperature fluctuations, humidity and wind direction and speed. Clouds dissipate before your eyes, storm fronts build up and illuminate the sky with lightning and snow can reduce visibility to almost nothing. However, the most amazing aspect of the new weather implementation is the ability to get live updates on real world weather conditions from the Web. The player can opt to use a one time update or to stay connected while playing and get automatic updates every fifteen minutes!

Air Traffic is another environmental feature expanded greatly in 2004. Other aircraft in the skies now behave more realistically; changing altitude and heading, changing approaches to airports and engaging in more detailed communications with traffic control. Flight Simulator 2004

## FAN SUPPORT

The Flight Simulator series has the best third party and fan support of any game ever and the avid player need never be satisfied with what comes in the FS box. These sites all have extensive libraries of free downloads for the older FS titles and will no doubt soon have material for the new game as well:

[www.simvation.com/menu.html](http://www.simvation.com/menu.html)  
[surclaro.com/nuke/html/index.php](http://surclaro.com/nuke/html/index.php)  
[www.fsplanet.com/](http://www.fsplanet.com/)  
[www.planesimulation.com/newsarc2.htm](http://www.planesimulation.com/newsarc2.htm)

has an almost unbelievable number of airports already built in, including Australian outback towns whose population consists of a few sheep and a goanna.

Century of Flight is the other title for 2004 with the reason being a tribute to the Wright brothers' first flight at Kitty Hawk in, well, 1903 actually. Not only is the Wright Flyer modelled in the game but eight other historic planes such as Amelia Earhart's Vega and the DeHavilland Comet that raced from London to Sydney. They aren't exactly the best performers around, but an interesting challenge nonetheless. Try doing the Atlantic crossing in the Vickers Vimy biplane bomber (no autopilot!) and you'll see what we mean. Of course, for the less historically inclined there are also a pile of newer planes, as well. Unfortunately, we cannot attest to the accuracy of their simulation as we've never flown any of them, but they all seem right, if that means anything.

The new Garmin GPS flight computer is much more accurate than the old flight computer in 2002. This is just as well due to the new weather conditions possible in the game. 2004's virtual cockpits are also much improved and have finally included full



instrument functionality so now you can look around smoothly and twiddle your knobs at the same time. This works well and is a big improvement over the useless virtual cockpits in 2002.

Of course, the graphics engine has been souped up not only with new weather but many 3D objects, terrain textures and better DirectX support. However, this is still a polygon based terrain engine, which means that when you get close to ground level, everything looks hideous, regardless of the resolution and details, and goes by so slowly you'd think you were in a zeppelin. An old game called Joint Strike Fighter has to this day the best terrain engine ever developed for a PC flight sim. Why, oh, why doesn't anyone even copy it, it's six years old for gosh sakes! The game industry doesn't seem to be interested in R&D any more.

George Soropos



# The Hulk

Hulk stealth? What about Hulk sneak?

Developer: Radical ■ Publisher: Universal Interactive ■ Distributor: Vivendi Universal ■ Price: \$69.95 ■ Rating: M15+ ■ Available: Now

**B**y the time you're reading this, Ang Lee's Incredible Hulk will be tearing up the Australian box-office to what will probably be mixed reviews. On the one hand, some reviewers will rave due to the easily accessible nature of the film - you don't have to be a fan of comics to understand the plot and, on the other, you'll have the more niche reviewers giving a harsher verdict due to the film straying from its comic book roots and betraying the fans. Likewise, The Hulk, one of Vivendi's powerhouse titles for this year, will receive mixed reviews - there's something simple and thrilling about running around as a not-so-jolly green giant and beating seven shades of snot out of everything that gets in your way, however, the stealth elements are, for want of a more damning word, terrible.

Taking place a short while after the conclusion of the film, Hulk pits everyone's favourite cranky id against one of his most deadly comic book enemies, The Leader, and his army of gamma enhanced goons and animals. Gameplay is broken into two distinctive elements, fighting and stealth. As the Hulk, the player has access to a range of close combat skills, great strength and a confrontational personality. As Bruce Banner players must sneak their way through a host of military installations, avoiding all guards and other enemies. The fighting elements of the game are great, if somewhat straightforward fun - players can execute simple three or four hit combos by mashing the corresponding key on the gamepad or keyboard as well as pick up and throw people or objects. As well as standard attacks, Hulk can charge up attacks by holding down the attack key for a short while, as well as unleash a range of special 'rage' moves when the rage meter is fully charged.

The Bruce Banner stealth levels exchange attack moves for crouching a few weak

## FAITHFUL LICENSING

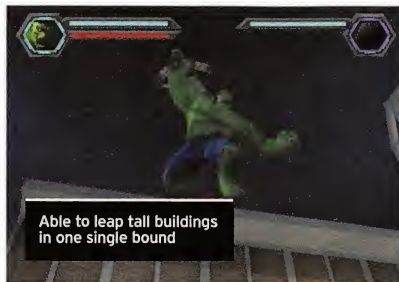
The comic book nerd in me wants to start railing against the fact that the game, like the film, has little to do with the comic apart from a few names and an angry green guy, but that's a personal gripe - if you want to hear me bitching about being faithful to a license you should jump on the forums some time and call me out.

punches. Whilst the idea of sneaking around as Bruce Banner isn't necessarily a bad thing, the execution definitely is. The levels are poorly designed and the camera frequently pans so as not to show you where you're going or where the guard patrols are. There is a first person view available to use, but it requires the player to stand prone in an area with a good line of sight to use - right in the line of sight of anyone who may be looking. To make matters worse, all of the levels use save points, so if you get spotted it's back to the beginning of the level to do it all again.

If you noticed in the last two paragraphs that there was no mention of mouse control, not only do you have an eagle eye, you also spotted the major problem with The Hulk -

there is no type of optimisation for the PC port. Only keyboard or gamepad are supported and there are save points rather than user defined saves. It's a pity that the stealth levels and quality of the port are so lacklustre because Hulk is otherwise an incredibly polished looking and quite a fun bit of action gaming.

Daniel Wilks



## SYSTEM

### NEED

P3-700+/Athlon  
192MB RAM  
1GB HDD  
64MB 3D video card

### WANT

P4  
512MB RAM  
DirectX 8.1  
1.8GB HDD

### MULTIPLAYER

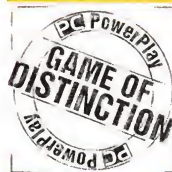
No

### ONLINE

[www.absinthebuyer.sg/ide.com](http://www.absinthebuyer.sg/ide.com)

Another green, mean and nasty thing that renders you incomprehensible and unable to see or walk straight.

## RATING

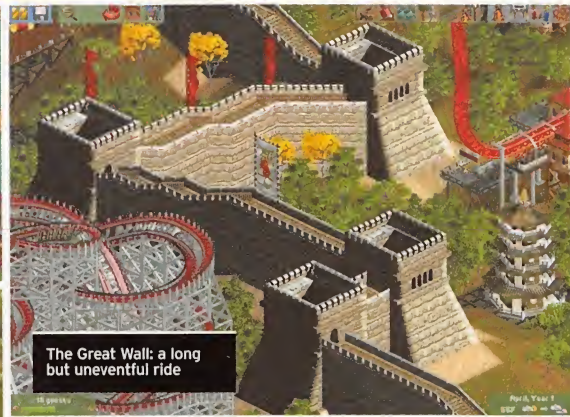


### OVERALL

Fun action let down by quasi-stealth levels and no PC optimisation

75





# RollerCoaster Tycoon 2: Wacky Worlds

The world of expansions is becoming a wacky place

Developer: Chris Sawyer ■ Publisher: Infogrames ■ Distributor: Infogrames ■ Price: \$29.95 ■ Rating: G ■ Available: Now

## SYSTEM

### NEED

64MB RAM  
DirectX 8.1  
150MB HDD  
RT 2

### WANT

P3  
128MB RAM  
200MB HDD  
DirectX 8.1

### MULTIPLAYER

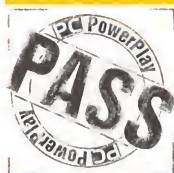
Yes

### ONLINE

[darwinawards.com/darwin/1999-20](http://darwinawards.com/darwin/1999-20)

People who have received posthumous Darwin Awards in bloody roller coaster mishaps. Wacky!

## RATING



### OVERALL

A small port of call on their way to unexplored waters with RCT3

61

**W**here do you lay the blame? It seems like only a couple of years ago the additions seen in this Infogrames expansion pack would be freely downloadable over the web. A couple of small extras leaked out over many months to maintain user enthusiasm in the product. Was it Blizzard's fault (Warcraft) or Sierra's (Half-Life)? Who's to know, but it's Joe Consumer that is getting spanked by the commercialism of the Internet, taking the wider world right out of the web.

Wacky Worlds is a half-arsed money churner for the relatively successful RollerCoaster Tycoon franchise. The new scenarios, additional rides and extra themes are a welcome bonus to fans of the game, however, the decision to not reward these loyal customers with free downloads as opposed to this overpriced disc has all the hallmarks of sharp metal probe between the shoulder blades.

The original RCT rolled, looped and wound its way on to our computer screens in mid-1999 and after a three year developmental hibernation, re-appeared almost identically in late 2002 as RollerCoaster Tycoon 2. It was less a caterpillar into a butterfly and more a snake into a slightly bigger snake. With the arrival of Wacky Worlds there was the potential for retribution, however, Infogrames has dropped the ball, giving

greater breadth to its product, but not depth. Not to say it doesn't hit its mark, as WW does exactly what it says on the box, it is just that the mark was so low.

So, what do you get for your hard earned cash? Well, 17 new scenarios spread over all seven continents with 250-odd cosmetic additions. The concept is to build RollerCoaster theme parks around (literally) or in line with the national stereotypes of the planet. In Africa, it is Victoria Falls, Australia has Uluru (criminally referred to as Ayres Rock in the instruction manual, die racists die!), in Asia it's the Great Wall of China and in Antarctica it's, um, icebergs.

The scenarios are quite cool, providing the appropriate look and feel for each location with the right cuisine (meatball soup in China) and cars (seal-shaped in Antarctica). Although there is definitely appeal in the gimmick of defacing a historical landmark with the epitome of Western commercialism, the theme park, it highlights WW shallow disposition. The 'expansions' are simply aesthetic.

So, what don't you get for your gruellingly attained mullah? There is basically no tweaking of the actual engine and although this isn't the crux of the expansion ritual, improvements could have been applied, especially as they try to squeeze sizeable landmarks into proceedings. For those who have played

through RCT 2 and are looking to find more life in the title, this expansion pack will wear thin more rapidly than a fat man's trousers. Perhaps this is a lead up to bigger and better things, ignoring the requests of devoted fans with WW, so as to further enhance RCT 3. If so, simply wait for that.

There is a definite reek of stagnation drifting out of this shameless cash in and if Chris Sawyer doesn't pull the RollerCoaster out from under his Grand Canyon soon, this series could be heading for the wreckers. Ardent fans will find interest in the new props, cars and themes, but the casual acquaintance should spend their dollars elsewhere.

Chris Stead

## WHAT WE WANTED

The quality of expansion packs must be improved; we should've received improvement instead of the same basic menu and options system. There should have been cross-pollination of continent specific attractions and they should have included a Sandbox mode. Instead, Wacky Worlds leaves you with an 'in the loop-to-loop feeling'. Your lunch is heading the wrong way, the girl next to you is screaming and what was supposed to be fun, just turned into carrots and peas.







# MotoGP: Ultimate Racing Technology 2

Crotch Rocket Dreaming...



Developer: Climax ■ Publisher: THQ ■ Distributor: THQ ■ Price: \$49.95 ■ Rating: G ■ Available: Now

**W**hether a fan of the genre or not, the idea of straddling a ludicrously overpowered missile-on-wheels and tearing around winding asphalt tracks at over two hundred clicks is unlikely to have anybody yawning. For those who think this sounds like a blast, but feel more at ease attempting the feat in the comfort of their own home, then take note of THQ's latest release, the fully licensed GP Motorbike racer, MotoGP 2.

When MotoGP 2 was released first on console platforms, I was fortunate enough to browse through a few console previews before getting my excited mitts on the PC review code. Notably, console gamers had collectively acknowledged that MotoGP 2 is an incredibly realistic simulation. However, I'm going to fly in the face of the console lads and claim that MotoGP 2 has traits more akin to a classic arcade racer with features such as corner 'indicator arrows', odd AI behaviour (they seem to slow down when you crash so you have to catch up!), the lack of damage modelling, simple bike-setup options and a booming in-race techno soundtrack.

To be fair, you can turn the helper arrows and the in-race music off, and the title does feature at least some realistic aspects, but this hardly qualifies as a 'hardcore simulation'. Although not a traditional sim, MotoGP 2 is still an impressive title, particularly considering consoles have less convention with flight and racing sims we PC users are privy to.

MotoGP 2 features some very groovy and long awaited features. These include independent front and rear brakes, which allow fun stunts such as burnouts and rear wheelies, motion blurring, and the ability to power slide corners. The motion blurring is an amazing effect employed to give a really incredible



Who's been practicing wheelies in Vice City?

## CAREER MODE

Despite offering the obligatory racing options such as quick race, time trial and multiplayer (the latter utilising GameSpy), the real strength of MotoGP 2 is the Career mode. Options are available to undertake challenges and tests (not dissimilar to Gran Turismo's licence tests) that earn the player experience points. These points can be spent on your rider, which is a further testament to the title's arcade nature, to increase certain attributes such as cornering, top speed and acceleration. Although lacking a plot, career mode is extremely well implemented and certainly constitutes the focal point of the game.

sensation of speed. The result is nothing short of fantastic.

When starting a quick race, you can choose a rider from one of the real life GP tracks and competitors, or if you choose the career mode, you can create your own rider. Both offer a selection of weather conditions that is either sunny, cloudy or raining, with the latter obviously having a significant consequence to racing physics - not to



mention producing some cool 'rain drop' and track reflection effects.

In fact, all the visual effects in MotoGP 2 are sensational. If verdicts where given on graphics alone, this title would be on everybody's 'must have' list. Everything from the animations to the 3D modelling and background scenery is impeccable with a multitude of racing camera angles and replays that are stunningly rendered.

Naming MotoGP 2 as the best motorcycling game available for the PC would be perhaps a tad overzealous, mainly due to competition offered by MotoRacer 3, but to hell with it, I'm going to do it anyway: MotoGP 2 is the best motorcycling game available for PC - certainly worth consideration for all cyber-bikers.

Victor Webster

## SYSTEM

### NEED

800MHz CPU  
64MB RAM  
32MB 3D video card

### WANT

1.8GHz+ CPU  
64MB GeForce 2  
128MB RAM  
Joystick or bike controller

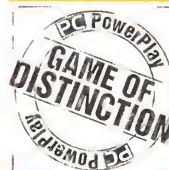
### MULTIPLAYER

Yes

### ONLINE

<http://www.darwinaward.com/tenite>  
Darwin Award winners with motorbikes. You see mum, you won't find a Darwin Award winner made famous by playing computer games.

## RATING



### OVERALL

Fun action let down by quasi-stealth levels and no PC optimisation

75









# ALL ABOARD THE 1.2GHZ BUS

**Bennett Ring** trials 13 motherboards to see which one deserves to be the place your Pentium 4 calls home

**W**ith the recent release of the 2.4C Pentium 4 (which overlocks to anywhere between 3.2GHz and 3.5GHz without much trouble), as well as the launch of the 865 and 875P motherboard chipsets, we thought you might like to know which motherboard to purchase that is based on either of these chipsets. And considering the amount of controversy regarding the shenanigans many manufacturers are pulling, we felt that you needed to know the real deal. Here's the story...

The 875P is Intel's flagship motherboard chipset, promising performance that is unrivalled by any other chipset. The 865 series is simply a poor man's version of the 875P, and the only difference is that it lacks two of the 875P's features. The first is probably something you could care less about, being ECC memory support, which is really only useful in servers. However, the second feature is more noteworthy for gamers. It's called PAT, which stands for Performance Acceleration Technology, and is basically just a combination of aggressive memory settings that boost performance. PAT \*should\* equal better performance for gamers, so we all want an 875P with PAT, right? Wrong...

Let's sort something out straight away - both the 865 and 875P chips are made on the same factory line. Those that are found to be of the highest quality are binned as 875P chips, which are then validated with the aggressive memory timings that make up PAT. Those that aren't tested at these aggressive settings are relegated to the 865 bin, and these supposedly shouldn't be able to run PAT. However, as we discovered with our motherboard roundup, many manufacturers have managed to run the cheaper 865 chipsets with PAT timings. We've got a feeling that the reason for this could be that the 875P chips were launched a month before the 865 series. By the time the 865 was released, the manufacturing process had been 'burnt in', thus churning out chips of a higher quality, and this enabled motherboard manufacturers to implement PAT-like settings on the 865. Or, it could be that 865 chips simply



aren't tested at all, so many of them might be quite capable of running at the faster settings. Regardless, the result is that manufacturers who have tweaked the 865 chipsets have created a motherboard chipset that runs as fast as, if not faster than, the 875P.

Intel is not happy about this, nor are the thousands of users who forked out more for a 875P board, only to see the cheaper 865 series outperforming their so called top of the line motherboard. We asked Daniel Anderson, PR manager of Intel's Australian division, how Intel feels about companies running PAT, or PAT-like settings, on the 865 series.

"Our initial observations indicate these platforms exhibit instability and in some cases actual failure. This marginality can be attributed to the way in which the 865PE chipsets are being 'tricked' into a non-specified and non-validated operating mode," said Anderson. "In the cases that Intel has observed, certain internal data paths and signals are being run at up to 50% above their specified operating range, which can lead to external interface marginality - this is commonly referred to as overclocking."

This means that you might have warranty problems, and Intel has not ruled out altering the 865 chips to stop this from occurring in future. However, our biggest concern is that of reliability. When we asked Intel if we could expect the same reliability from these overclocked 865 chipsets as from the fully validated 875P, Anderson's response was clear. "No. If the system is run beyond the design intentions, unpredictable system operation may result. Prolonged exposure out of specification can result in damage to the component and/or degrade performance and reliability."

Of course, Intel would say this, but it raises doubts as to whether or not the 865 would be the best basis for an overclocked system. Currently, it appears that nobody has yet encountered any stability or hardware failure problems with the 865 series, but only time will tell whether or not these overclocked chipsets will last for the long run. As a result, we still recommend forking out a little extra for the 875P board if you can afford it - chances are you'll get a higher, more stable overclock from

this premium chipset.

Now that we've cleared up the issue with the 865 series, let's get on with the good stuff. There are three different 865 chipsets available, so we chose to test boards that use the 865PE chipset, as this is the only one that officially supports DDR400 memory. We also tested boards that use the 875P chipset.

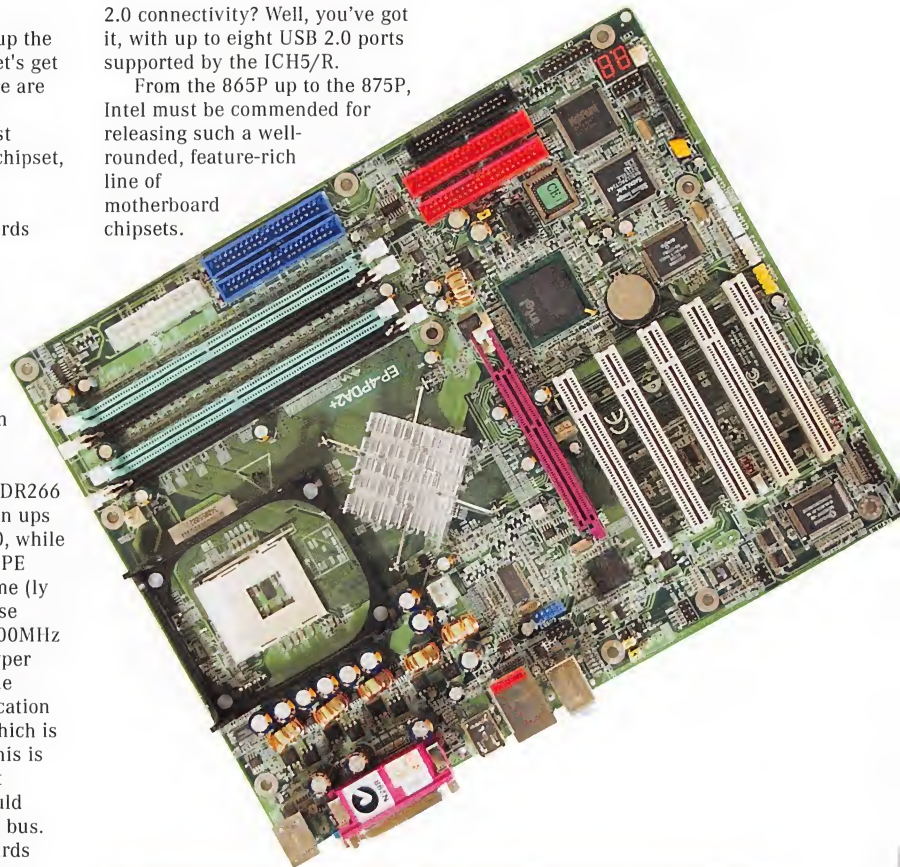
## The Feature List

There are currently three flavours of 865 motherboard - the 865P, the 865PE and the 865G. The P is the 'budget' version of the chipset, and lacks official support for DDR400 memory, only supporting DDR266 and DDR333. The PE version ups the ante to support DDR400, while the G version is basically a PE with integrated Intel Extreme (ly slow) Graphics 2. All of these chipsets support the new 800MHz frontside bus, as well as Hyper Threading. They also include Intel's new CSA (Communication Streaming Architecture), which is a dedicated network bus. This is necessary thanks to Gigabit Ethernet speeds, which would otherwise choke up the PCI bus. However, not all motherboards based on the 865 chipset that include Gigabit Ethernet use the CSA. So if you do purchase a motherboard that has Gigabit Ethernet, try to ensure that it's using the CSA architecture for optimal network performance. If you're looking for a motherboard with 8X AGP, fear not, as all of the 865 and 875P chipsets now support this standard. As stated before, the only difference between the 875P and the 865PE is support for PAT and ECC memory. However, due to the testing that the 875P undergoes to validate it for PAT, we recommend it for those who want to push their system to the max.

All of these chipsets, as well as the 875P, use one of two Southbridges, the ICH5 or the ICH5R. The only difference between the two is support for Serial ATA RAID, which is only found on the ICH5R. The ICH5/R is very impressive when it comes to features. Two Serial ATA ports (150MB/sec) are supported, while ATA100 is supported for your Parallel ATA drives. You want USB

2.0 connectivity? Well, you've got it, with up to eight USB 2.0 ports supported by the ICH5/R.

From the 865P up to the 875P, Intel must be commended for releasing such a well-rounded, feature-rich line of motherboard chipsets.



## HOW WE TESTED

We used our shiny new testbench setup (see our PowerTools page 99) for the testing of these motherboards - with one exception. Instead of the usual 2.6C processor, Intel was kind enough to loan us two Pentium 4 3.2C engineering samples, which just happen to be multiplier unlocked (check out our Overclocker's ABC if this means nothing to you). This meant we could test the overclockability of each motherboard, as we could lower the multiplier to 12X and crank up the front side bus. Every motherboard was flashed to the latest BIOS that was available at the 20th of June. If a BIOS had a performance setting, it was enabled, although this was always disabled for the overclock test to boost stability. Our Corsair memory was set to run in Dual Channel mode at DDR400, with memory timings set to By Spd. We used CPU-Z v1.18 to determine that memory and bus timings were indeed as we'd set them via the BIOS.

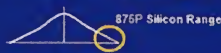
Four tests were selected to determine the performance of each board. First up was the memory bandwidth test in SiSoft Sandra, a synthetic benchmark that focuses on the performance of the memory system of each motherboard, and is an excellent way of showing which boards have the most aggressive memory timings. Next up was [H]ardOCP's UT2003 CPU benchmark, set to run at 640 x 480 to remove the

potential of the video card acting as a bottleneck. 3DMark2001SE was also used, but again we ran at 640 x 480 resolution. We also used its D3D Software T&L rendered mode, instead of the Hardware T&L renderer, as this takes the load off the video card and places it squarely on the shoulders of the CPU and motherboard. Finally, we tested how fast we could overclock the frontside bus of each motherboard. For this test, the AGP/PCI ratio was locked to 66MHz/33MHz, while the memory ratio of 3:2 was used to keep our memory within its rated frequency limits. Due to the fact that the minimum multiplier allowed on the engineering samples is 12X, when running a fsb of 300MHz the CPU was running at 3.6GHz, which we believe is around the ceiling of the current Pentium 4 architecture. So the boards that reached a fsb of 300MHz might be able to run even faster - if there was a CPU that existed that could keep up. Please remember that the fsb on these boards is quad pumped, so if we ran it at 300MHz, it's actually effectively running at 1200MHz. The default fsb for these boards is 200MHz, effectively 800MHz.

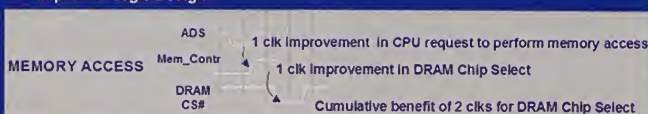
You'll notice that unlike most other magazines, we didn't use any productivity applications for testing. Why? Well, who gives a damn if Word loads 0.00487 seconds faster, or PowerPoint runs 0.32% slower? Not PC PowerPlay, that's for sure.

## Intel® 875P Chipset Intel Performance Acceleration Technology (PAT)

- Advanced Manufacturing/Test
  - Advanced process technology
  - FULL SPEED testing (S9K ATE) at Final Test ensures robust operation for 875P
  - Comprehensive Validation & testing



### Improved Logic Design

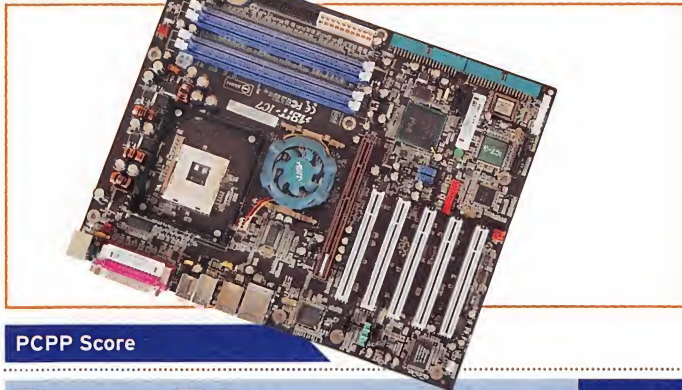


- All external interfaces run per standard specifications (no overclocking)



## ABIT IC7-G

■ Price: \$385 (\$264 for IC7) ■ Distributor: Altech ■ URL: [www.altech.com.au](http://www.altech.com.au)



PCPP Score

Power: 5 Value: 4.5 Extras: 3.5

Unless you really need four serial ATA connectors and a Gigabit Ethernet connection, we'd have to recommend the IC7 over the IC7-G. Both use the 875P chipset, and other than these features are basically identical. Strangely, the IC7 doesn't have any onboard Ethernet at all.

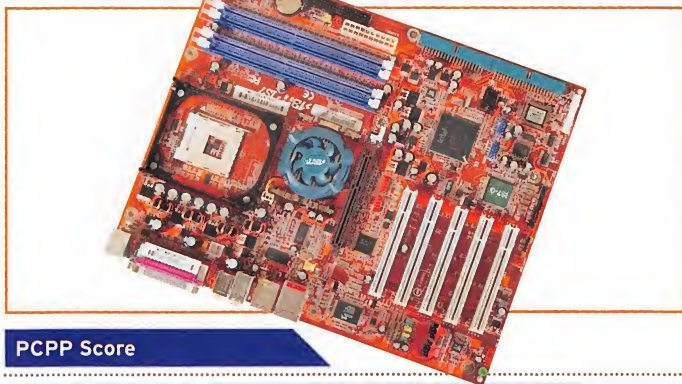
Using a sexy black PCB, the IC7 is a fairly well laid out motherboard. However, the strange positioning of the IDE connectors hasn't had many admirers, although we don't see it as being a major problem, especially considering ABIT include rounded IDE cables. The RAM slots are also a little too close to the AGP port, so you'll probably have to remove your video card to get access to your RAM,

especially with mega cards like the GeForce FX. The Northbridge fan is a little noisy at its highest speed, but this can be tamed to almost silence using the fan EQ setting within the brilliant Phoenix BIOS.

IDE RAID is not supported on this board, while SATA RAID (0,1) is, courtesy of the ICH5R southbridge, which also supplies eight USB 2.0 ports. In terms of performance, the IC7 was definitely one of the leading contenders, and it also proved to be one of the most overclockable. Considering the amazingly low price of the IC7, we can't recommend this board highly enough. The perfect platform for your Pentium 4.

## ABIT IS7

■ Price: \$229 ■ Distributor: Altech ■ URL: [www.altech.com.au](http://www.altech.com.au)



PCPP Score

Power: 5 Value: 5 Extras: 3

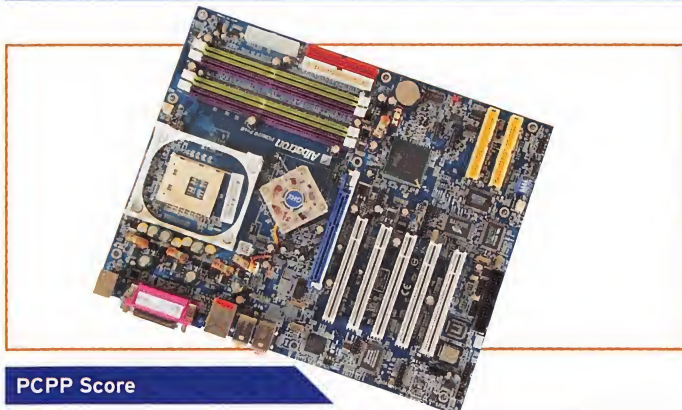
It's astounding that you can pick up such a powerful board for such a low price. Considering it's one of the cheapest motherboards in the PowerTest, we couldn't believe that it was also one of the highest performers. In fact, it even outperformed its bigger brother, the IC7, although only by the smallest of margins.

The 865PE powered IS7 uses ABIT's Gaming Acceleration Technology, which is just a sneaky way of saying PAT without incurring the wrath of the Intel god. We all know what Intel has to

say about manufacturers doing this. As a result, we'd still recommend the IC7 over the IS7, as it's only \$35 more and should prove to be a more stable platform. However, for the total cheapskates, you can't really go past the IS7. It's got all the high end features of the IC7 such as SATA RAID (0,1) and a decent onboard sound solution, performs a tiny bit faster, and is still one of the best overclocking boards available. It's even got an integrated 10/100 Ethernet port, something that is lacking from the IC7. The budget board of choice.

## Albatron 865PE Pro 2

■ Price: \$315 ■ Distributor: Australia IT ■ URL: [www.australiait.com.au](http://www.australiait.com.au)



PCPP Score

Power: 3.5 Value: 4 Extras: 4

Case modders might be attracted to this 865PE board thanks to its glowing LED Northbridge fan. It's a fairly well laid out motherboard with one major exception; the disco/ Northbridge heatsink is far too close to the AGP port, which could cause some major problems with bulkier video cards. Unless you like the sound of snapping hardware.

IDE RAID (0,1) is provided courtesy of a Promise PDC20276 controller, while SATA RAID (0,1) is taken care of by the ICH5R Southbridge. The onboard sound solution is unique to this board, using VIA's new Envy VT1720 sound chip, which is a close relation to the sound chip used in the M-

Audio card reviewed this issue. This supports 7.1 output at 24/96 - simply amazing for an integrated sound solution.

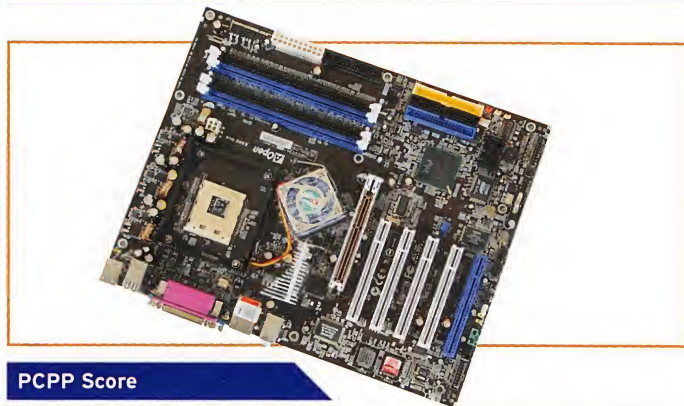
Sadly, this board is let down by its performance, performing in the middle to low end of the pack. Obviously, Albatron hasn't implemented PAT technology on this board, but this could well be rectified by an upcoming BIOS.

This isn't a bad motherboard at all, it's just that there isn't anything really exceptional about it other than the sound. However, it remains one of the cheapest of the motherboards on offer, which helps to offset the slightly disappointing performance.



## AOpen AX4C Max

■ Price: \$450 ■ Distributor: Bluechip Infotech ■ URL: [www.bluechipit.com.au](http://www.bluechipit.com.au)



PCPP Score

Power: 3 Value: 3.5 Extras: 4.5

This 875P board is notable for the massive number of drives that it can handle - ten in total. It's also one of the few boards that can handle IDE and SATA RAID 0+1 in the roundup, as well as the usual 0 and 1 modes, thanks to its Promise PDC20378 controller.

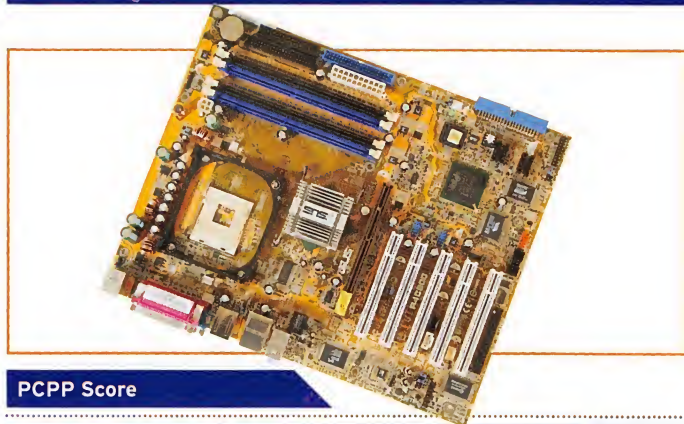
The BIOS is very friendly to novice overclockers, as it handles all AGP/PCI ratios automatically. If you want to try to overclock your AGP and PCI ports, it'll let you, but we recommend you stick with the fixed ratio. Upon booting up, all important frequency and temperature information is displayed, unlike most of the boards in this roundup. It's a

nice touch that is again focused at overclockers. This board uses the Realtek ALC650 codec, as seen on the IC7. It's not the greatest sound solution out there, but it does the job.

While its feature list is commendable, sadly the performance of this board is lacking. It tested almost 10% worse than the best board in the Sandra benchmark, and this translated into relatively poor performance in the other benchmarks. It also maxed out at a fsb of 280MHz, which suggests that even though it has great BIOS overclocking features, the board still isn't the best choice for overclockers.

## ASUS P4C800 Deluxe

■ Price: \$399 ■ Distributor: Achieva ■ URL: [www.achieva.com.au](http://www.achieva.com.au)



PCPP Score

Power: 3.5 Value: 3 Extras: 3.5

The P4C800 Deluxe is ASUS' 875P offering, and we'd heard great things about this board before testing it. However, it appears that ASUS has followed the same controversial path as ABIT, producing an 875P board that is actually slower than its 865PE brethren.

This board has a very nice layout, with plenty of room for a bit of push 'n' shove around all of the major sockets and slots, and the passive Northbridge makes this an attractive offering for those on a quest for silence.

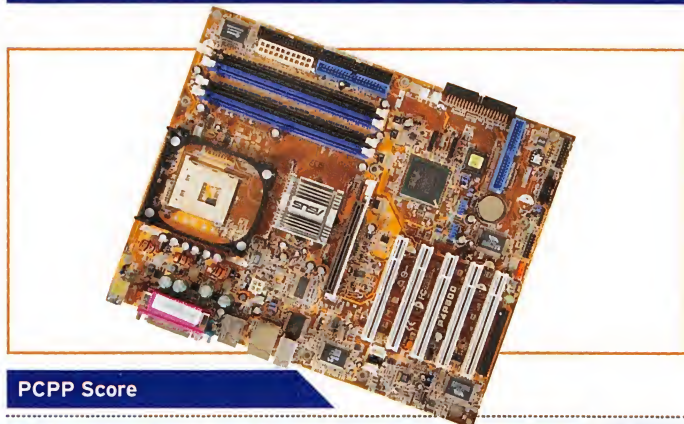
The Promise PDC20378 RAID controller seems to be flavour of the month at the moment, and the P4C800 is yet another 875P board to

feature it, giving it IDE RAID (0,1,0+1) support, as well as the standard SATA RAID (0,1) supplied by the ICH5R Southbridge. This board is fairly overclocker friendly, thanks to its generous voltages of 1.95V for the CPU and 2.85V for the memory.

Sadly, this board didn't shine when it came to the benchmarks, which is surprising considering its stellar reputation. We made sure every single performance tweak was enabled in the BIOS, and even set the memory manually to run at 2-2-2-5, but the board was still around 5% to 10% slower than the fastest 875P motherboards. With a high price also, we can't recommend this motherboard over some of the better performers.

## ASUS P4P800 Deluxe

■ Price: \$429 ■ Distributor: CASSA ■ URL: [www.cassa.com.au](http://www.cassa.com.au)



PCPP Score

Power: 4.5 Value: 3 Extras: 4

Considering this is based on the 865PE chipset, the price of this motherboard is rather high - over \$400 in fact. So, what are you buying?

For starters, you'll get one of the best layouts of all of the boards on offer, with plenty of room around the CPU socket, memory slots and AGP port. It's also one of the few boards with a passive Northbridge cooler, resulting in a quieter PC.

It's also got the VIA VT6410 RAID controller, allowing for IDE RAID (0,1,0+1), as well as support for up to ten hard drives. Combined with the SATA RAID support (0,1) of the ICH5R, it's perfect for the pro'nmaster's web server in your basement.

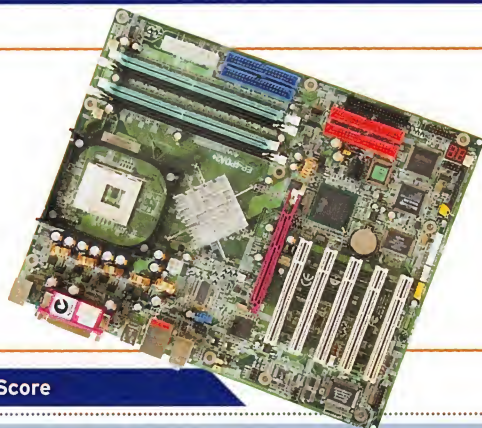
Overclocking options are commendable, although we'd still prefer the memory voltage to go up to 3V, which would allow for higher overclocking of your memory. Based on its benchmark results, ASUS has obviously enabled PAT on this motherboard. Tsk Tsk. Thanks to this, the P4P800 was one of the highest performers in the PowerTest, and it also happened to be one of the few boards that successfully reached a 300MHz fsb.

If it wasn't for the price, we'd have no qualms about recommending this board. As it is, unless you need the additional RAID functionality, we'd have to point you to ABIT's offering.



## EPoX 4PDA2+

■ Price: \$360 ■ Distributor: Westan ■ URL: [www.westan.com.au](http://www.westan.com.au)



PCPP Score

Power: 3 Value: 3.5 Extras: 3.5

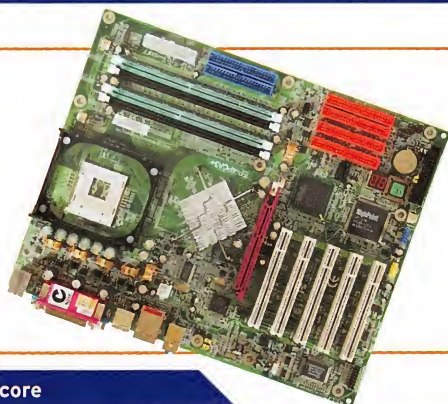
Unlike many of the boards we saw with silver PCBs and flashing heatsinks, the 4PDA2+ looks like it's been built purely with work in mind. It's a rather ugly 865PE motherboard, but who cares if it does the job well? There is plenty of space around all of the sockets, and the passive Northbridge is a welcome inclusion, as is the onboard LED POST code readout, which can help to diagnose any problems that occur during the boot up stage. The BIOS used on this board is probably the best of the lot when it comes to tweaking your PC and, like the AOpen board, displays all of your relevant temperatures and frequencies when booting. A Silicon Image SI3112A RAID controller

provides SATA RAID (0,1,0+1), as well as the standard SATA RAID (0,1) provided by the ICH5R Southbridge, but there is no option for IDE RAID. A total of twelve drives can be hung off this motherboard, making it one of the most storage friendly of all of the boards in the PowerTest.

Voltages are a mixed bag. We love the 3.3V for the memory, but a meager 1.6V for the CPU just doesn't cut it. Sadly it appears that EPoX hasn't implemented any PAT-like features, and as a result its performance is lacking. This board tested in the low end of the roundup, which is surprising considering it comes from such a performance oriented manufacturer.

## EPoX 4PCA3+

■ Price: \$393 ■ Distributor: Westan ■ URL: [www.westan.com.au](http://www.westan.com.au)



PCPP Score

Power: 3 Value: 3.5 Extras: 3.5

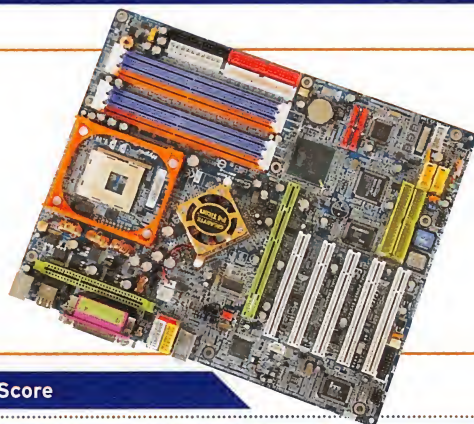
The 875P brother to the 4PDA2+, this motherboard is very similar to its cheaper sibling - a common theme amongst all of the boards in the PowerTest. However, the HPT374 gives this board the ability to run IDE RAID, with support for RAID 0+1 (as well as 0 and 1) on top of the ICH5R SATA RAID support (0,1). A whopping fourteen IDE drives can be strapped to this board, which is just plain silly. In a good way.

Unfortunately, this proved to be one of the slowest of all of the 875P motherboards in the roundup, and

we're not sure why. We made sure that all settings were at maximum speed, yet it still performed significantly slower than most of the motherboards in the roundup. EPoX is obviously having a few teething problems with both the 865PE and 875P chipsets - hopefully future BIOS revisions will cure these. It's sad to see that a company with such an excellent reputation amongst tweekers faired so badly in this PowerTest, but it goes to show how tricky it can be to implement a motherboard chipset well.

## Gigabyte 8KNXP

■ Price: \$569 ■ Distributor: Synnex ■ URL: [www.synnex.com.au](http://www.synnex.com.au)



PCPP Score

Power: 4 Value: 3 Extras: 4.5

When it comes to features, you'd be hard pressed to find another 875P motherboard that is so chock full of goodies. Gigabyte's Dual BIOS system ensures that if you stuff up your BIOS flash, you can simply switch over to your backup, while the colour coded pins for your power switch and HD LED make hooking it up a total cinch. The Dual Power System 2 provides high quality 6-phase power, giving you a more reliable power supply with cleaner voltages hence greater stability. The DPS2 comes on its own little daughter board, complete with heatsink. A GigaRAID IT8212F supplies you with the option to RAID (0,1,0+1) your IDE drives, while the ICH5R supplies the

usual SATA RAID options (0, 1).

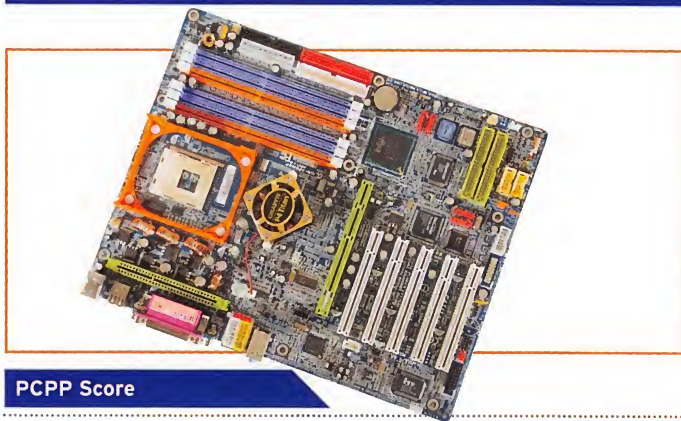
Using its BIOS was tricky - it took us a while to figure out that we needed to hit ctrl+F1 to enable the 'advanced' BIOS options that allowed overclocking. Once we had found this section, the results were puzzling. After activating Top Performance mode, our benchmark results were actually slower, and overclocking the fsb turned out to be a cryptic affair. A maximum CPU voltage of 1.6V makes this board unfriendly to overclocking, although it definitely did better than its 865PE sibling.

Excellent performance with the 8KNXP coming around fourth, however unless you need the feature set, we find the cost hard to justify.



## Gigabyte 8PENXP

■ Price: \$529 ■ Distributor: Synnex ■ URL: [www.synnex.com.au](http://www.synnex.com.au)



PCPP Score

Power: 4.5 Value: 3.5 Extras: 4.5

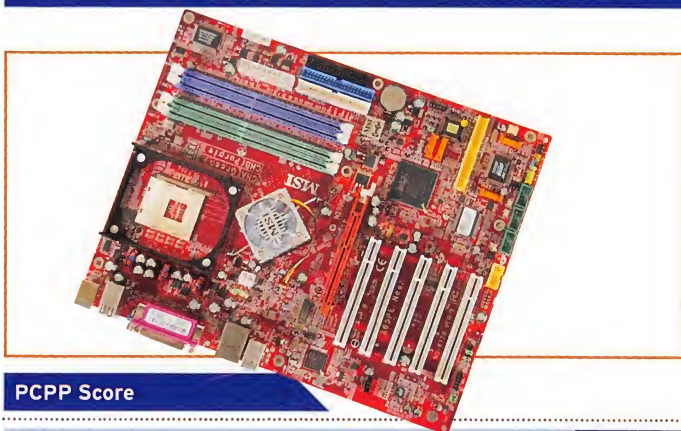
It appears that Gigabyte is another naughty manufacturer who has implemented PAT on its 865PE series of motherboards. As a result, at default speeds this board is up there with the best of the 875P motherboards. Like the other Gigabyte board, the 8PENXP is one of the most expensive boards in the roundup, but this is somewhat justified by its extensive functionality - it's basically got everything that the 8KNXP has.

But there was a problem. When it came time to overclocking the board, we used our standard overclocking technique - lower the multiplier, lock the AGP/PCI and memory, disable all performance options and start upping the front side bus. 210MHz - fine.

215MHz, no worries. 220MHz, things are looking good. 225MHz - nothing. No boot, no POST screen, no nothing. We worked for hours trying to fix it, and even contacted Gigabyte directly, who had no suggestions other than to try setting BIOS to default options and starting again. Which we did. And it was still naffed. Considering the board worked perfectly at default speeds, we knew it wasn't a faulty unit, so concluded that these problems are a result of the PAT implementation. This is why we suggest you stick to the 875P chipset if you're thinking of overclocking your P4. If you're not going to overclock, this board is fine, but for \$500, we expect a board that overlocks to the clackers.

## MSI 865PE Neo2-FIS2R

■ Price: \$349 ■ Distributor: MSI ■ URL: [www.msi.com.tw](http://www.msi.com.tw)



PCPP Score

Power: 4 Value: 4 Extras: 4

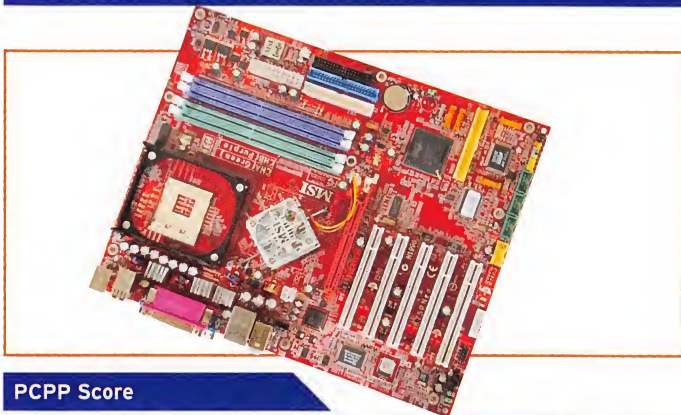
Stop snickering at the Fister name now. Considering the reasonable price, this is actually a well rounded motherboard, with plenty of features to keep you busy. It's got a nice clean layout, and has the same SATA RAID (0,1) support of all boards that use the ICH5R Southbridge, but the inclusion of the Promise PDC20378 provides additional IDE RAID (0,1, 0+1) support over and above the SATA RAID support.

If you take a look at the benchmarks, you'll see that this board performed the best, indicating that MSI has enabled tweaks. However, this motherboard 'cheats', using a technology known as DOT (Dynamic Overclocking Technology) which

automatically overclocks the fsb. When we ran at the default fsb of 200MHz, this board clocked it up to 203MHz - not enough for most to notice, but enough for it to come out on top of the roundup. Even after disabling this feature, the fsb was still being automatically overclocked. The problem with this is you'll set a fsb that you know should work fine, but this board adds a little more making it unstable. This occurs even after disabling the DOT setting. For this reason, we can't recommend this board for anyone who has overclocking in mind, which is a pity as its memory voltage (3.3V) and CPU voltage (2.3V) could have made it perfect for the tweaking crowd.

## MSI 875P Neo-FIS2R

■ Price: \$436 ■ Distributor: MSI ■ URL: [www.msi.com.tw](http://www.msi.com.tw)



PCPP Score

Power: 3 Value: 3.5 Extras: 4

At almost \$100 more than the 865PE Neo-FIS2R, we expected this board to be much better than its cheaper cousin. We were wrong. It's almost completely identical apart from the fact that it uses the 875P chipset, and thus has the official PAT and support for ECC ram. However, its sound solution isn't as good as the 865PE board, and as you can see from the benchmarks on page 89, this board is actually slightly slower than its cousin, the 865PE board.

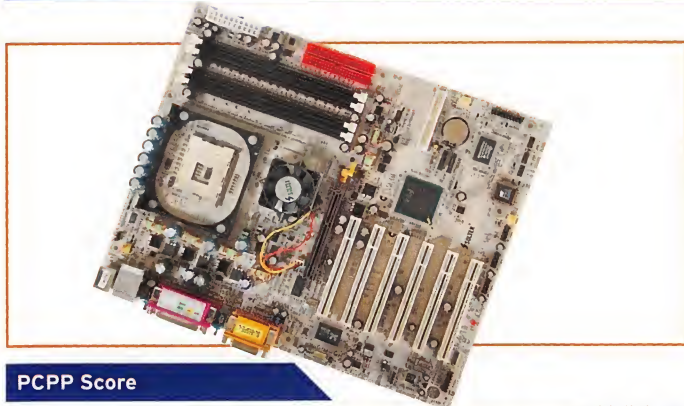
In fact, this board proved to be downright average in all of our

tests, usually testing around the middle of the pack. This board is indicative of the strange results we saw popping up through out this test - the 865PE, when tweaked to the hilt by its manufacturers, can often outperform the 875P chipset. Don't expect this to last for long though, as we're sure Intel is soon going to put a stop to these tricks. So you might want to grab an 865PE board with PAT while you can, instead of paying good money more for slower boards such as the 875P Neo-FIS2R.



# Soltek SL86SPE-L

■ Price: \$195 ■ Distributor: Altech ■ URL: [www.altech.com.au](http://www.altech.com.au)



PCPP Score

Power: 2.5 Value: 3.5 Extras: 2

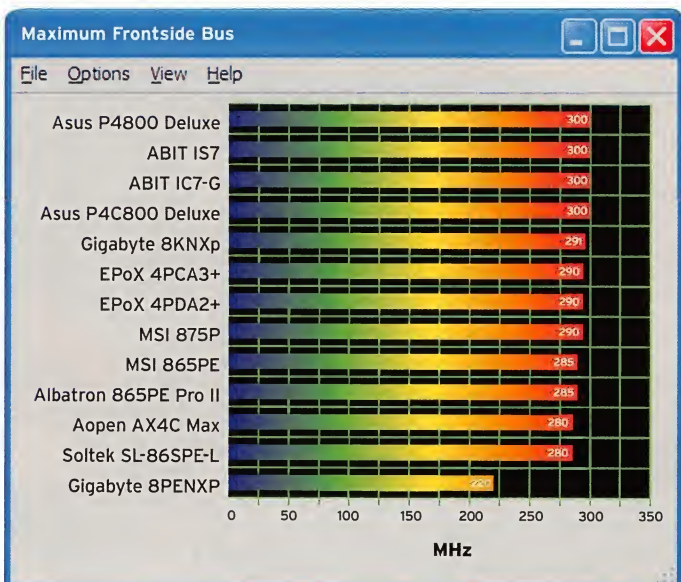
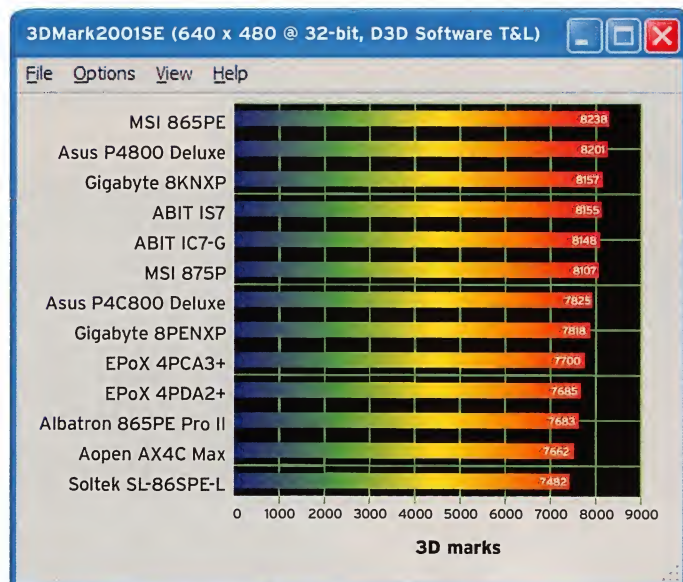
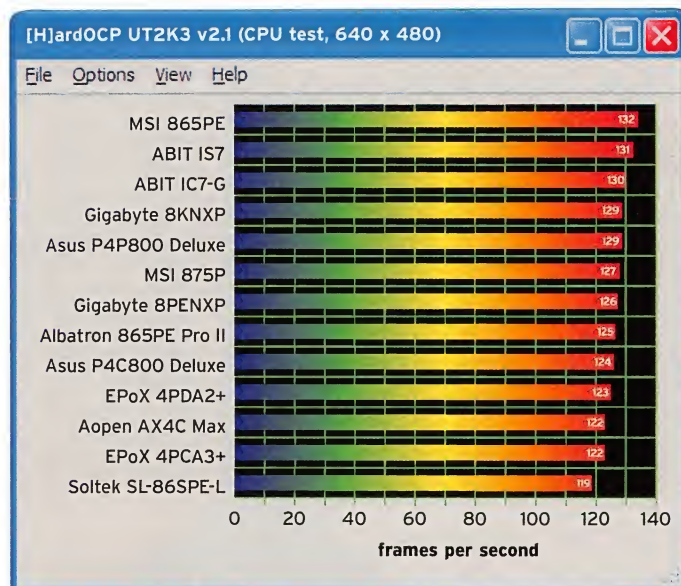
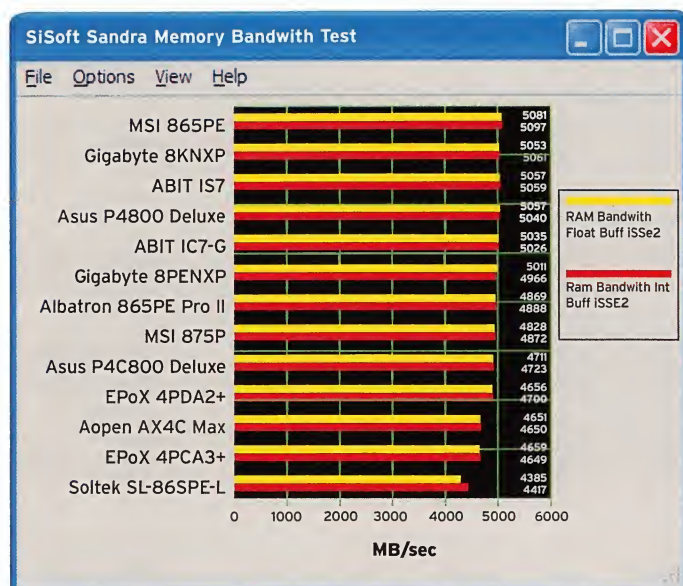
As the cheapest board in the PowerTest, we didn't expect the SL86SPE-L to be packed to the brim with addons and features that most people would never use. And it wasn't. However, it does what it sets out to do - provide you with a cheap home for your new Pentium 4, with a minimum of fuss.

As is standard for most Soltek products, the SL86SPE-L is coated in Soltek's proprietary silver coating, making this a nice board for the Perspex inclined. To help keep costs down, Soltek was the only manufacturer in the roundup to use the ICH5 (not the ICH5R) Southbridge, so this board does not

support RAID at all, although you can still hook up 2 SATA drives. There is no additional RAID controller either, so don't even think about setting up IDE RAID. It's also lacking the IEEE1394 support found on every other motherboard.

Sadly, it's obvious from the benchmark results that this board hasn't had PAT or any other performance boosting techniques implemented. It took out the last place in all of our benchmarks, and it was also one of the lowest overclockers. Considering this poor performance and lack of features, the SL86SPE-L doesn't even come close to the IS7, which is a mere \$30 more.

## Benchmarks





# M-Audio Revolution 7.1 PCI sound card

■ Price: \$269 ■ Distributor: Electric Factory [www.elfa.com.au](http://www.elfa.com.au) ■ Product URL: M-Audio [www.m-audio.com](http://www.m-audio.com)

The Revolution 7.1 is an eight-channel sound card based on VIA's Envy 24HT chipset. On spec, it boasts some impressive audiophile features as well as some 'stuff' for us gamers. Is it a Kreative Killah? If the claims made by M-Audio are true, and given that the Audigy2 is THX certified, then this card is 'big-time' indeed. The Revolution has no internal analogue or S/PDIF connectors, which means that your CD/DVD drive must support digital playback and there is no joystick/MIDI port either. However, gamers will appreciate the Revolution's support for a wide array of sound APIs: If your game has it, the Revolution likely supports it!

## Into the stalls

The test rig was a moderately endowed PIII-933 with 768 MB RAM on Win XP Pro (SP1), fully patched and waxed, with fast disks. Some FutureMark tests recorded the test results and were verified with dual, mono-tympanic membranes comprising the usual anvil/stirrup setup. I also industriously hooked the card up to my Onkyo 110W/channel receiver to get volume over 80dB. Why? To unleash the potential of this card. Once you hit a certain quality of output, and you're using multimedia speakers, the limiting factor is the speakers. The Revolution implements SRS TruSurround XT, Sensaura/Game Mode and SRS Circle Surround II, which proved useful for music, movies and gaming.

The 'baseline' soundcard was an Audigy2 which is somewhat of a

yardstick if you ignore the pricey but fabulous Terratec 6FIRE. The Revolution proved to be trouble free with the nifty feature of dynamically changing output from analogue to digital (and vice versa) on the fly. The Revolution's drivers are very well implemented, with everything in one applet. All settings ranging from speaker setup to bass management to surround field selections are accessible. As for the drivers themselves, system stability was never an issue. Speaker setup is dead-easy using the pre-defined configurations and of course, other more or less advanced systems can be set up manually.

## Through it's paces

Gaming performance and embedded sound effect technology focused on some EAX games: the isotropic War Craft 3, and Unreal Tournament 2003 and Half Life 3D pieces. DirectSound 3D comparisons were performed in Quake 3. Half Life also supports DS3D, MacroFX and A3D, and it also has its own reverb engine. CPU hit will depend on the reverb engine and the power of soundcard using it. Some game reverb engines aren't of the same quality as the Audigy2 or Revolution and what reverb engine sounds best is very subjective. Synthetically, the Revolution doesn't perform as well as the Audigy2 in speed due in part to the absence of hardware support for DS3D. I tested it in Quake 3 and found, however, the performance difference to be negligible if any. Those with 1GHz or faster systems won't even notice a difference. Besides losing a few frames, you

won't notice anything if you play games higher than 640x480, and even then, the differences are but a few frames. Remember, at resolutions of 1280x1024 and up, the video card's fill-rate and memory bandwidth will limit the performance in games, not the sound card. Is the lack of hardware DS3D support critical? It will be interesting to see if the lack of hardware support for it will significantly degrade the Revolution's performance in next generation games. Inside games, the Revolution faithfully reproduced all the sounds I expected using the various APIs found in today's games and older ones. EAX effects sounded slightly better on the Audigy2, but were still well within range on the Revolution. With Half Life, where sound is one of the main features of the game, the Revolution did not fail and gave an excellent performance that actually sounded better than the Audigy2 with Circle Surround II Music enabled. Panning and occlusions were also well handled by the card.

## Listen up

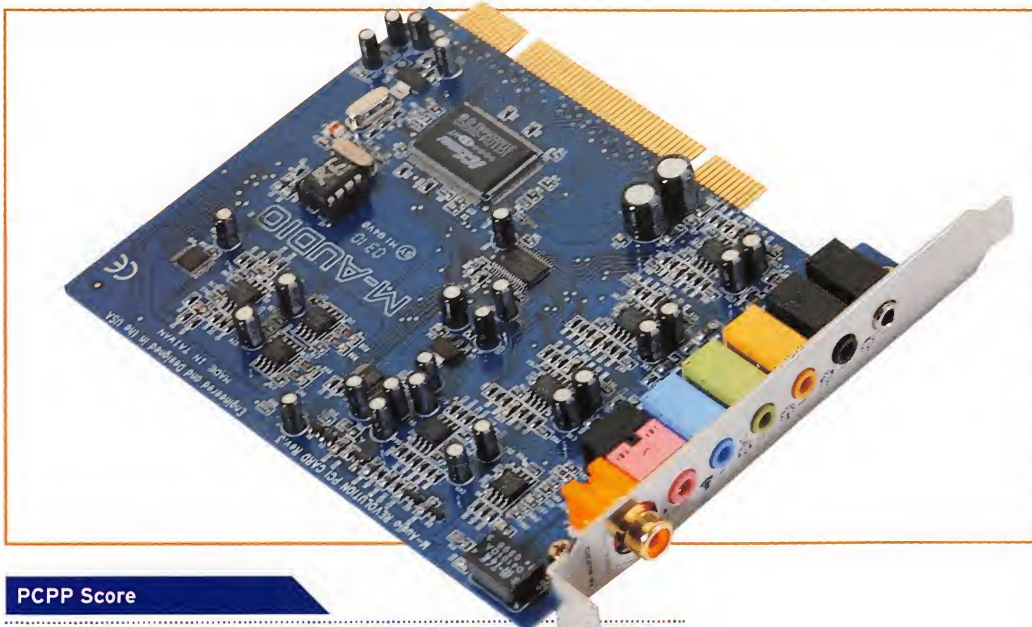
DVD playback and stereo music were considered too. I played a range of MP3 songs and some CD-DA ranging from vocal to instrumental. I have to say that DVD playback and music fidelity is simply superb even over wide dynamic ranges and extreme sound stages (Saving Private Ryan, True Lies and The Matrix). This card offers an affordable way for anyone to get into high-fidelity music and the surround sound home theatre market. The bundled software will suit most people: full versions of Tony Hawk Pro Skater 3, Mixman

Studio, VJ Lite and WinDVD; there is also an M-Powered Artists Sampler and trial versions of various music-creation software.

## Given odds

If I have to diss' the Revolution at all, I consider the points minor. Although there are no optical S/PDIF interconnects, the co-axial digital-out is more than ample and can travel further than optical without quality loss. Also missing is a way to input signals digitally but I suspect most people won't find this limiting. The lack of a MIDI/game port will be unnoticed by gamers using USB devices and is but a temporary nuisance for those with D-sub joy sticks and pads. As most late model CD/DVD-ROMs can output a digital signal through the PCI interconnect, the absence of internal analogue and digital sockets will also affect few people. The lack of hardware DirectSound3D support might affect those with computers around the 900MHz mark or slower, but even then, the performance hit is minimal. I suspect that future revisions of this sound card just might include hardware support for DS3D as the performance drop-off in next year's games may not be tolerable. The outstanding high point of the Revolution is its high-fidelity: Trust me on this: 24-bit/192KHz on all channels is a 'big thing'. There aren't many soundcards on the street that can claim 24-bit/192KHz processing and DACs to process all eight channels. 7.1 channels does appear extreme but so did the thought of a 3GHz processor just 12 months ago. The Envy 24HT controller combined with the excellent AKM Semiconductor DACs faithfully reproduces music and sounds with obvious improvement. For the price, it's a definite must-have alternate to the Audigy as more and more people use their computers for playing DVD movies and other rich multi-media content.

Stuart Calvin



## PCPP Score

I'm impressed. For overall fidelity the Revolution is better than the Audigy2 due to its high quality AKM components. DS3D issues not a problem for now.

# 86

## SPECIFICATIONS

- Compatible with Windows and Mac OS Systems
- 24-bit/192KHz playback and recording on all eight channels
- Speaker configurations from stereo (or headphones) up to 7.1
- Coaxial (RCA) S/PDIF output
- Supports DTS output and Dolby Digital 5.1 and EX (6.1) decoding
- Stereo 1/8" mini analog Line Input
- AKM DACs
- S/N Ratio D>A: 107dB (1)



## Zalman ZM80A-HP

■ Price: \$60 ■ Distributor: Altech [www.altech.com.au](http://www.altech.com.au) ■ Product URL: [www.zalman.co.kr](http://www.zalman.co.kr)

Two years ago the biggest craze in the tweaking world was extreme cooling for your PC. You simply weren't hardcore unless you had 23 case fans and a 14,000RPM Delta fan strapped to your CPU. However, people soon realised this made it rather difficult to hear anything other than a 747 landing on your face, and now the ultimate tweaky freaky goal is to cool your PC efficiently, while maintaining the same dBA (volume level) as a mouse letting rip. Zalman is a company synonymous with effective, silent cooling, and its ZM80A-HP is the latest example showcasing the reputation.

This cooler is designed to replace the dodgy, \$2 buzzing fans that many video cards are now shipping with. It's a passive design, which means it doesn't use fans at all. So, it's totally silent, unless you use it to bash against the giant gong rusting away in your back shed. You know, the shed where you keep all the bodies...

The ZM80A-HP is a fairly simple

piece of engineering. It's made up of two huge slabs of Aluminium, one for the front of your card and one for the rear, that are joined together by a gold coated heatpipe. Only the front slab comes into contact with your video card's GPU, and the heatpipe is used to magically transfer heat to the rear slab. Well, it's not really magical, but it is pretty cool. It's also pretty easy to assemble - anyone with a little Lego experience should be fine. But does it work?

We don't recommend you try this cooler on the GeForce FX 5800 or 5900, but it's perfectly suitable for the 9800 PRO, which is still a very hot card. Check the Zalman website for a list of compatible cards. We strapped it onto an ATI 9800 PRO and installed it in a standard PC tower, with no case fans running at

all to see if the Zalman could handle such poor conditions.

Which it did. Admirably. Even when we'd overclocked the core of the 9800 PRO to 410MHz, the Zalman took care of the heat. However, it did cause the temperature of our overclocked 3.3GHz Pentium 4 CPU, which hangs just above the video card, to rise by around 7C, but this didn't cause any problems with stability at all.

If you're looking for a silent solution for your video card, the Zalman does the job nicely, even when the video card is overclocked. However, be aware that your CPU temps will rise, especially if you don't use case fans, which mightn't make this cooler suitable for everyone. It's also a tad expensive, but can you put a price on the peace that results from silence?

**Bennett Ring**

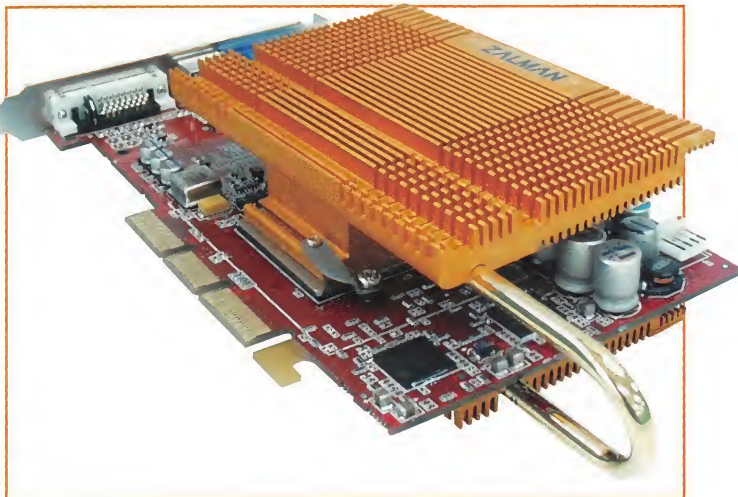
### SPECIFICATIONS

- 385 grams
- Aluminium heatsinks
- Gold plated heatpipe

### PCPP Score

It's big, it's heavy and it's hot. But it's worth it if you want a whisper quiet PC.

**87**



## Lian Li PC6070 silent case

■ Price: \$379 ■ Distributor: Anyware [www.anyware.com.au](http://www.anyware.com.au) ■ Product URL: [www.lianli.com](http://www.lianli.com)

Okay, so here's another Lian Li case review. You're already expecting a few standard comments - tough aluminium construction, impeccable attention to detail, slide out motherboard tray, thumb screws on all the bits you're likely to need to undo a lot, and no power supply.

Like all of Lian Li's cases, the PC6070 is a solid beast indeed, hiding all drives and buttons behind a mighty slab of the purest aluminium, giving the whole thing a nice hardcore server look when closed up.

Inside there are four external 5.25" bays, three external 3.5" bays, and three internal 5.25" bays that include a converter plate so you can use them for your 3.5" hard drives. Add to this three internal case fans (two front and one rear), two USB 2.0 ports discreetly mounted at the base of the front of the case and you have yourself a seriously flexible solution.

And yet, it does seem that Lian Li is sitting on the laurels of its previous earlier victories. While

the PC6070 is a great case, it's essentially the same thing we saw in 2001, with a different facade and USB 2.0 ports.

The biggest problem with the case is its reliance on screws. Lian Li thoughtfully includes nearly 100 screws of various denominations, but other case manufacturers such as Antec are minimising the use of screws and improving quick access to components.

For instance, if you own a couple of Antec cases and you only have one DVD writer, you can quickly whip it out of one case and into the other thanks to the plastic runners and clips included. With the PC6070, you have to unscrew both

sides of the case, remove them, remove all the screws holding the drive and repeat the whole thing in reverse on your other case.

Also, where Antec cases have a latch to quickly release the internal drive bays, once again the PC6070 has several screws that need to be removed before the

HDD can be accessed.

In the end, while this is an excellent case, Lian Li needs to get with the future and realise users need faster access to their components. The PC6070 is solid, but slow, and as a result Lian Li is no longer the obvious choice for the hardcore user.

**Anthony Fordham**

### SPECIFICATIONS

- 4x 5.25 bays, 3x 3.5 bays, 3x convertible bays
- 3x internal fans (2 front, 1 rear)
- 2x USB 2.0 ports
- Solid aluminium front gate

### PCPP Score

An excellent case, impeccably built but now looking a little old fashioned when compared to the quick-access features of its competition.

**88**





## iRiver iFP-390T 256MB MP3 Player

■ Price: \$475 ■ Distributor: JNC [www.jnc-digital.com.au](http://www.jnc-digital.com.au) ■ Product URL: [www.iriver.com](http://www.iriver.com)

**T**hanks largely to Asia's continuing love affair with tiny electronic doohickies that can dangle from the wrist as you howl past your disported peers in a Nissan Skyline GTR, there are now roughly ten bazillion different ultra-small form factor MP3 players to choose from.

Believe it or not, the 390T is actually one of the larger units on the market, significantly larger than the single AA battery that powers it. However, this allows for a control system big enough that you don't need to train a spider monkey to work the buttons for you (although some would consider this a sad disadvantage). The screen is also large, about the size of a stamp, backlit in blue and with a fine enough resolution for a few cutesy graphics and a surprising amount of info about each track, including bit rate.

Unlike a lot of the cheaper tiny MP3 players, the 390T has some internal file structure, with different

folders for music, voice recordings, and direct encoded music, making navigation that little bit easier.

Sound quality is as good as your earphones. The included buds are pretty unspectacular, however, if you shell out for some quality 'phones, like Sony's tiny EX71s, the output from the 390T is as good as an expensive discman, assuming you've encoded your songs at 320kbps.

Memory can't be upgraded, but the included 256MB is enough for about 80 tracks, or six or seven average albums. Unfortunately, it doesn't double as a USB thumb drive, although it does interface with the PC through USB, using bespoke software, which is basic but easy to use.

### SPECIFICATIONS

- 256MB onboard memory
- Direct MP3 encoding
- Voice recording
- FM receiver
- Armband and neck strap

### PCPP Score

Full-featured unit with excellent build quality. Power demands are low, but price is disturbingly close to 10GB HDD MP3 players.

# 79

So sure, the 390T is a good unit, but it's pricey. Consider that for an extra \$120 you can pick up a 10GB iPod. Yes, the iPod is considerably larger and heavier than the 390T, but it holds 2500 tracks as opposed to 80. I guess it's a question of priority - do you want your MP3 hanging from

your wrist, or in your pocket?

The iRiver 390T won't handle your entire music collection but it will handle enough tunes for a day's outing. It's light but not flimsy and the FM tuner is well integrated rather than a pointless gimmick.

**Anthony Fordham**



## Epson EMP-S1

■ Price: \$1,999 ■ Distributor: Epson [www.epson.com.au](http://www.epson.com.au) ■ Product URL: [www.epson.com.au](http://www.epson.com.au)

**I**n the not too distant future, display devices as we know them will be extinct. No longer will you have a giant box plonked in front of you - instead, a tiny unit will hang from the ceiling, projecting a massive screen onto the nearest available flat surface. Unfortunately, projectors currently cost around what you'd get for your left kidney in China, but prices are starting to drop. The Epson EMP-S1 is a fine example of these rapidly diminishing prices.

At just under \$2,000, this is one of the cheapest projectors currently available. As such, don't expect it to perform quite as well as a \$5,000 model. However, considering its price, it's astounding just how good this projector is.

The EMP-S1 uses a LCD projection system, with a native resolution of 800 x 600 at a 4:3 aspect ratio. While this isn't quite as sharp as the higher priced 1024 x 768 projectors, it's still great for

watching DVDs and playing games, especially if you've got a video card that runs well with antialiasing enabled. We tested the projector at a range of approximately 2.5 metres from the screen, and found it very difficult to perceive individual pixels at this range.

The lamp within the EMP-S1 is rated at 1200 ANSI lumens, with a contrast ratio of 400:1, which isn't quite bright enough for the unit to be used in a room that isn't darkened. The relatively low contrast ratio can also make certain games unplayable, as areas of the game that are dark tend to merge into black, making it hard to pick out detail on the screen. However, for games that are quite bright, this

### SPECIFICATIONS

- 3.2kg
- 1200 ANSI lumens
- 400:1 contrast ratio
- S-video
- Composite and component input

### PCPP Score

For the price, this projector is unbeatable. If you've been holding off on purchasing a projector until prices dropped, this is the one.

# 85

isn't a problem at all.

If you're going to be using a projector for entertainment purposes, it needs to be silent. Thankfully, this projector is very quiet, with the lamp's cooling fan being impossible to hear even during silent scenes. Speaking of the lamp, replacement globes are relatively cheap, at \$349 with an average lifetime of 2,000 hours. That's a meagre 17 cents per hour. A

wide range of I/O options means you can hook up almost any input you can conjure up.

Considering the exceptional pricing of the EMP-S1, it's easy to overlook the slightly lower specs of this projector. Combine it with a small media PC and a decent set of speakers, and you've got yourself an awesome home theatre for less than \$3k. Why wait any longer?

**Bennett Ring**





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# CPU FACE-OFF

Max Gillett reports from the frontline as Intel and AMD fire their latest salvos

## Intel Pentium 4 3.2GHz

■ Price: \$1200 (approx.) ■ Distributor: Intel ■ Product URL: [www.intel.com](http://www.intel.com)



Intel's Pentium 4 has made a lot of headway in the last 12 months, dropping prices to help combat AMD's Athlon XP, being paired with two excellent new chipsets (the Springdale i865 and Canterwood i875) and allowing excellent overclockability.

We tested the 3.2GHz with a series of theoretical and real world benchmarks using dual-channel DDR400 on Abit's IC7-G. Most of our synthetic benchmarks gave the P4 a clear lead when compared to the latest Athlon XP, frequently by as much as 15-20%. However, this gap narrowed to about 5% or less in our gaming tests - the difference between their overall 3DMark03 scores was less than 2%.

### PCPP Score

The 3.2GHz Pentium 4 certainly delivers blistering speed... but we've owned cars that cost less.

# 80

The P4 still offers marked benefits in other areas though, and Hyper-Threading in particular means tasks that involve CPU intensive multitasking are no problem on a P4, while they remain inadvisable on even the fastest Athlon XP.

Overclocking the 3.2GHz didn't prove to be quite as rewarding as some of its predecessors. Although we were still able to get around a 10% speed increase with minimal FSB

### SPECIFICATIONS

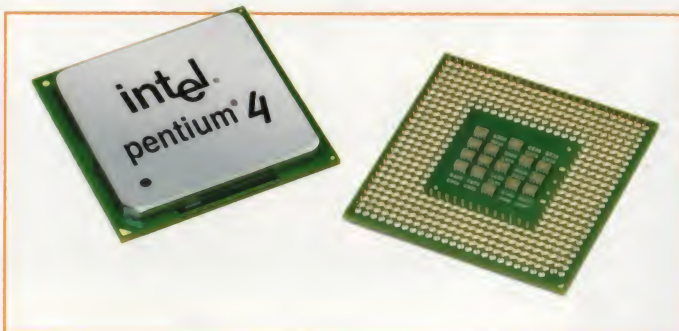
- Socket 478
- 800MHz FSB
- 3.2GHz
- Hyper-Threading

tweaking, this is nowhere near the 30% performance gain you can usually expect from its 2.4GHz sibling, the current CPU of choice for overclockers. While the 3.2GHz remained rock stable at 3.58GHz, our test CPU simply wouldn't boot to Windows when clocked at 3.6GHz - even after considerable voltage increases and RAM tweaks.

Intel's latest also suffers one major

drawback: it's damned expensive. Even compared to the relatively pricey \$900 AXP 3200+, the 3.2GHz is in a class all its own: you'll be lucky to find one below \$1200.

If you want the fastest CPU money can buy, then the 3.2GHz P4 is it. However, given you can usually get the same performance out of a 2.4GHz model for a quarter the price, we know which CPU we'd choose.



## AMD ATHLON XP 3200+

■ Price: \$900 (approx.) ■ Distributor: AMD ■ Product URL: [www.amd.com](http://www.amd.com)

The most marked distinction between the new AXP 3200+ and its 3000+ predecessor isn't core design or speed. Both use the same Barton architecture, and the speed difference between the two is a meager 30MHz. However, whereas the 3000+ relies on a 333MHz fsb, the 3200+ has a new 400MHz one.

This FSB increase is important because it allows the 3200+ to run synchronously with 400MHz DDR; a synchronous bus can improve overall system performance and speed.

Unfortunately, theoretical benchmarks such as SiSoft Sandra's CPU tests still show the 3200+ falling

as much as 20% behind the 3.2GHz P4. In terms of raw gaming framerates, there's not a huge amount of difference between the two - as long as you have a good graphics card, gaming is close to identical.

However, the disparity between the two becomes more apparent when you compare specific multimedia tests like SYSmark2002's Internet Content Creation. This is an area where the P4

still has up to a 25% advantage.

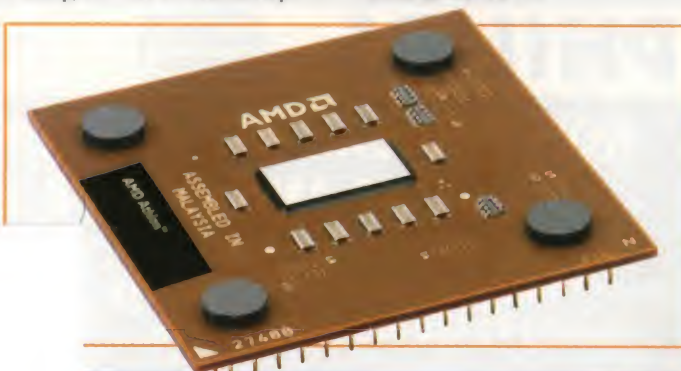
Like the 3.2GHz P4, the 3200+ offers decent, but far from overwhelming overclockability.

When testing the 3200+ on the MSI K7N2 Delta motherboard, there were stability problems. While it was rock solid in 2D apps, 3D benchmarks would frequently crash back to the desktop, or freeze the machine up.

It seems that the nForce2 is picky about the DDR400 you use when operating with dual-channels, which significantly improves performance. We found that the problem is rife and the only solution to the issue is to buy an entirely new set of RAM. If you're looking to build a system with a 3200+, we advise waiting until these issues are sorted out.

### SPECIFICATIONS

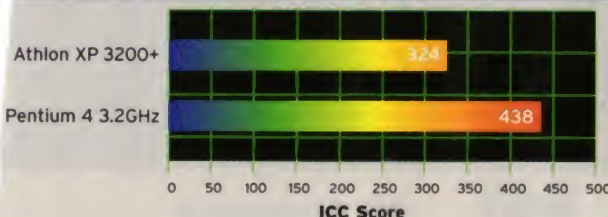
- Socket A
- 400MHz FSB
- 2.2GHz frequency



### PCPP Score

### ark2002 ICC

Options View Help





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# Corsair Hydrocool 200

■ Price: \$500 ■ Distributor: Altech [www.altech.com.au](http://www.altech.com.au) ■ Product URL: [www.corsairmemory.com](http://www.corsairmemory.com)

When we looked at some of the first water coolers back in 2001, they leaked, and leaking means destruction. The Hydrocool 200 is not a leaky system. Apart from secure clamps on the water block, which you mount on the CPU, there are also auto-closing valves on both ends of the pipes coming out of the case and on the funky black box that holds the pump and reservoir.

The manual mentions that you should only use distilled water - several times in big black letters. This is because the water block uses 'microchannel technology', hundreds of tiny copper channels to move water across the contact surface. Put ordinary tap water through them and the impurities and chemicals will variously bond to and eat away at the microchannels until the block is rendered quickly useless.

Meanwhile, in the big black box that holds the pump, the flow meter and the reservoir, water is cycled through an aluminium radiator to dissipate heat. That's right, aluminium and copper in the same system, which equals corrosion. So make sure that water is distilled, damnit.

The Hydrocool's performance is good but hardly amazing. It ran an idle 3GHz P4 at 32 degrees, only six

degrees lower than the stock cooler. Under load, though, it ran the CPU at 41, compared to the stock cooler's 52.

The stock cooler only managed to lift the P4 to 3.4GHz before spitting chips with overclocking, while the Hydrocool allowed us to push the machine all the way to 3.7GHz. Good speed, but worth \$500?

The Hydrocool 200 is a detailed system with lots of parts including a funky but flawed flow meter and the fattest LCD display, but the bottom line is this cooler works well at an expensive price. Experienced tweekers could probably build a system just as effective for half the price. Had it been able to run a 3GHz P4 at the mythical 4GHz, I'd be singing its praises. As it is, only buy if water cooling is your dream, but leaks are your nightmare. It's reliable.

Anthony Fordham

## SPECIFICATIONS

- 200w maximum cooling
- Mounts for Athlon and Pentium 4
- Large LCD temp display
- Auto-closing valves
- 12V DC pump
- Smoked perspex case



## PCPP Score

While results are good but not spectacular, this unit doesn't leak, looks funky and will last as long as your thrashed-out CPU.

81

# Xtreme DDR PC3700+ 1GB kit

■ Price: \$690 ■ Distributor: Light Speed Distribution [www.lsd.net.au](http://www.lsd.net.au) ■ Product URL: [www.xtremeddr.com](http://www.xtremeddr.com)

With the new Intel chipsets hitting such high front side bus speeds, there's a demand for memory that can run synchronously with your fsb at 250MHz. That'd be DDR500 - pity that this memory hasn't officially been ratified by the masters of DDR, JEDEC. Currently the fastest 'official' DDR memory is DDR400, which is clocked at 200MHz, but XtremeDDR has managed to push existing memory to DDR500. Surprisingly, XtremeDDR didn't borrow a modified DeLorean to bring some DDR500 kits back from the future, so how do they get RAM to run this fast?

Before anyone starts whining that games don't need 1GB, be assured that many now do, especially Massively Multiplayer Online titles such as PlanetSide.

This 2 x 512MB kit uses Samsung DDR400 modules, mounted on XtremeDDR's own high quality 6-layer PCB. These modules are manufactured on a Samsung

certified line leased by XtremeDDR, which are then sent to Colorado for testing. The testing procedure involves each set being put through an rst pro machine, which tests the modules integrity. It is then put into an air driven handler, which flashes the memory with XtremeDDR's custom .spd file. Finally, each set is hand tested in a motherboard to make sure they'll run at the increased speed.

When you first install this memory, you'll need to burn it in at a slightly lower speed for a couple of days first, before pushing for warp speed 9. A motherboard that supports 2.8V memory voltage is also necessary to ensure stability, although you might get lucky with 2.7V. We burnt the memory in at

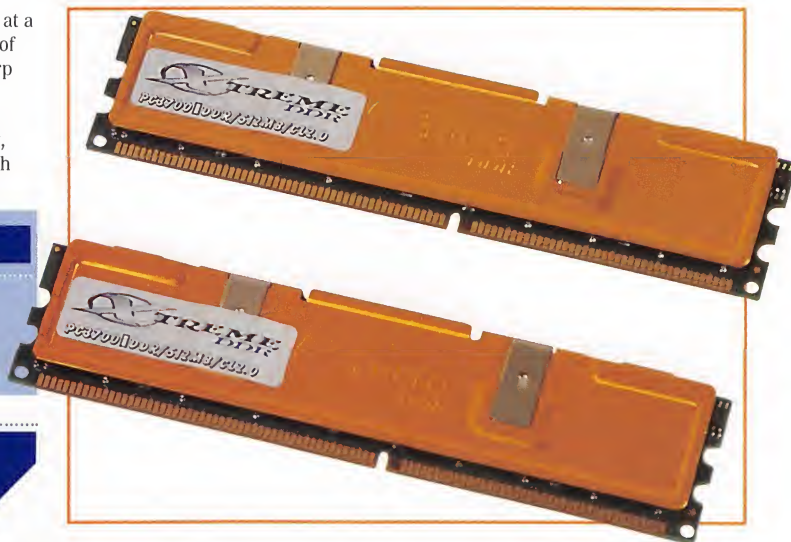
## SPECIFICATIONS

- Lifetime warranty
- Samsung -CC/CC -5ns Chip
- Aluminium heat spreader

DDR480 for two days on an ASUS P4C800, before cranking this kit up to light speed. We managed to get the kit to run stably at DDR520 (260MHz). At the By Spd setting, the memory timings were 3-4-4-8. SiSoft Sandra's memory bandwidth benchmark was used to test the throughput of the memory at this speed; the Integer test reached 5854MB/sec, while the floating point test reached 5882MB/sec. Yowzers.

You'll be hard pressed to find any memory that can touch this kit. Considering it's only around \$80 more than 2 x 512MB sticks of DDR400, the additional cost is worth it, as you'll not only have the fastest memory subsystem possible on today's systems, you'll also be future proofing your memory investment.

Bennett Ring



## PCPP Score

If you're looking to upgrade your memory and want to make the move up to 1GB, this kit comes highly recommended.

90



## D-Link AirPlus Enhanced 2.4GHz Ethernet to Wireless Adapter

# DWL-810+

Introducing with high-speed wireless networking + transfer rates of up to 22Mbps - the DWL-810+.

DWL-520+

DWL-1000ap+

DWL-650+

DWL-900ap+

DWL-810+

### D-Link AirPlus Enhanced 2.4GHz Ethernet to Wireless Adapter

D-Link announces another great addition to the D-Link AirPlus series of high-speed wireless networking products capable of transfer rates up to 22Mbps - the DWL-810+ Ethernet-to-Wireless Adapter.

The D-Link AirPlus DWL-810+ converts virtually any Ethernet device - a set-top box, game console, printer, a laptop or a desktop computer - to a wireless network device. Now Ethernet-enabled printers can be shared in the home or office without stringing cable through walls or ceilings. And gamers can join multiple-player video games with others on the Internet using a high-speed broadband connection. The DWL-810+ features advanced silicon chip design from Texas Instruments, utilizing their patented Digital Signal Processing™ technology.

With its Web-based configuration and simple setup wizard, the DWL-810+ is easy to install, enabling users to quickly connect to an existing D-LinkAir, AirPlus, or other 802.11b-compliant wireless network. And because it's a D-Link AirPlus product, it transfers data much faster than standard 802.11b devices.

The DWL-810+ also features 256-bit WEP encryption for a higher level of security for your communication. Use this inexpensive, compact adapter to expand the number of devices and peripherals available on your wireless network.

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# KiSS Technology A/S DVD Player DP-450

■ Price: \$645 ■ Distributor: Light Speed Distribution [www.lsd.net.au](http://www.lsd.net.au) ■ Product URL: [www.kiss-technology.com](http://www.kiss-technology.com)

Tired of watching your DivX movies on a computer screen? If you take a DVD-ROM for the PC, a REALmagic EM8500 DVD decoder chip from Sigma Designs and stick them in a cool black box, you've got a 'Danish KiSS'. Now, you can output VCD, SVCD, DVD and MPEG-4 to a TV screen. The DP-450 from KiSS Technology is the first DVD player to support high-quality playback of most versions of DivX, XviD, RMP4, 3ivx video content. The DivXNetworks MPEG4 video codec is a very popular video compression technology, so think of it as the 'MP3 of video'. DivX technology enables full length films to easily fit onto one CD and the ability to play MPEG-4 is attributable to the matchless Toshiba SD-M1712 DVD used by most CD Freaks around the world. But by the same token and not unusually, copy protected audio discs, in all likelihood, will not play in the KiSS, depending on the type of protection employed. The integrated REALmagic decoder only plays DivX content that has been compressed with a version 4.02 codec and above. My version 5 DivX movies played very well and the Progressive Scan feature

did result in a more vivid picture and provided an overall sharper image quality.

Dolby Digital is supported for downmix to analog stereo, but is otherwise channelled as RAW or PCM through SPDIF Optical or Coaxial outputs. It doesn't decode DTS, but neither do many other DVD players, relying on a dedicated receiver for playback from the digital outputs. DVD-Audio discs are not supported, but the KiSS does three things most set-top DVD players can't do: play

MPEG-4 (among a variety of other formats), play the connoisseur-preferred Ogg Vorbis music format and play JPEG picture files. The .jpg format is found on most digital cameras and can be burnt to CD and played on the family TV. The KiSS does what's it's advertised to

do very well and the minuses are small-fry. Improving digital-rights management will make the KiSS an essential element of home entertainment for DivX enthusiasts soon, if not already now. Should you buy one? Hell, yeah!

**Stuart Calvin**

## SPECIFICATIONS

- Progressive Scan DVD
- ISO MPEG-4 and DivX V-4/5 playback
- CD-DA, Ogg Vorbis and MP3 Playback
- CD-R/W and DVD 'dash' RW compatible
- JPEG Photo Album
- Optical and Co-axial SPDIF out
- Analogue stereo out
- Video out via SCART (RGB)
- S-Video and composite
- Remote Control
- Firmware update by CD-ROM



## PCPP Score

Easy to setup and use, the KiSS is a valuable addition to the Home Theatre and Computing experience.

**80**

# Samsung 213T 21.3" LCD

■ Price: \$3499 ■ Distributor: Samsung [www.samsung.com.au](http://www.samsung.com.au) ■ Product URL: [www.samsung.com.au/samsung.asp?cat=52&obj=1187](http://www.samsung.com.au/samsung.asp?cat=52&obj=1187)

I really, really wanted to love this monitor. When I pulled it out of the excitingly large box I thought, yes, this is a serious screen. Tiny bezel, massive viewable area, funkalicious silver styling, DVI input; the 213T had everything going for it.

Unfortunately though, despite all its greatness, this massive LCD has a response time of only 25 milliseconds. It's not terrible, but it's not real great either. At 16ms, you can't tell the difference between LCD and CRT in most games, unless you look really closely. But back up at 25ms, FPS games have a distinct blur, especially when turning and jumping.

Interestingly enough, UT2003 had barely noticeable smearing, but the older Quake 3 Arena was almost painful to play, since every platform or corridor seemed to have a groovy motion blur applied to it.

At this response time, it's clear that only moving the whole image gives the monitor problems.

Elements within an image, such as bots, don't exhibit any smearing or blurring at all, and RTS games such as C&C Generals are fine.

The 213T's native resolution is 1600x1200, so you'll want to pair this monitor with a serious video card that can run games this high, otherwise graphics will look somewhat blurry thanks to the monitor's interpolation of lower resolutions on its 1600x1200 grid. While the resolution is good, at this price we would have been a lot happier with a 2048x1024 screen. The screen can also pivot to run in portrait mode. A disturbing number of LCD monitors come without DVI

input, but the 213T includes the digital interface, so at last you'll be able to make use of that mysterious white plug on your video card. You'll also get an extremely crisp image, and on the desktop this monitor leaves all CRT offerings for dead.

Indeed, the sole sticking point of this screen is its combination of

price and response time. For \$1000 less, the slight blurring would be worth a screen this bright, crisp and big. But Samsung is asking the price of a meaty machine, and without a 16ms response time, the 213T can't justify it.

**Anthony Fordham**

## SPECIFICATIONS

- 21.3" viewable area
- 250 cd/m<sup>2</sup> brightness
- 1600x1200 max resolution
- 25ms pixel response time
- 170 degree viewing angle
- DVI in



## PCPP Score

Beautifully built, awesomely designed and totally let down by the 25ms response time. Drop the price by \$1000 and I'd consider it.

**76**

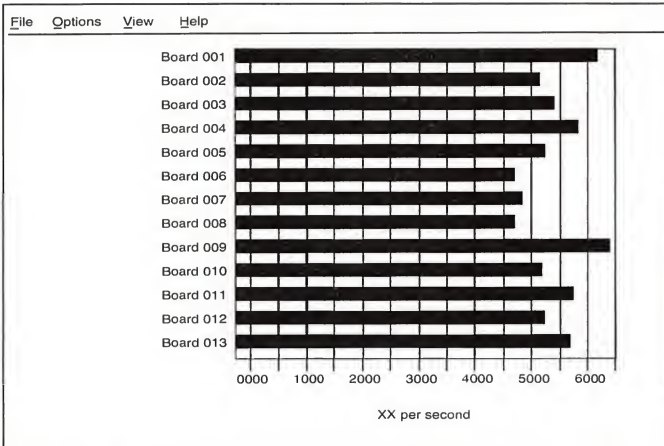


# Bennett Ring PowerTools

Welcome to the PowerTools, the section where we describe how the hardware featured in PC PowerPlay gets a thorough whipping, so we can figure out which gear you want to buy, and which gear is best left in the trash can. Testing hardware relies heavily upon the use of benchmarks, applications that enable us to see exactly how well a component or system measures up against the competition. However, there is much controversy over which benchmarks to use, but the general consensus is that the best tests rely upon real world applications, such as games. There is still a place for synthetic

tests that simulate the load a piece of hardware will be put under, but we're going to be relying for the most part on real world games for our testing. Unfortunately, developing and testing benchmarks based on games is not a simple task, so our PowerTools are still in development. We've been talking with some of the biggest names in hardware and games, and you'll see the new benchmarks that result over the next couple of issues of PC PowerPlay. Until then, the following benchmarks are the main tests we'll be using on our review hardware. Other benchmarks will also be used when appropriate.

## Benchmark Testing



## SiSoft Sandra 2003:

This synthetic benchmark focuses on specific components within your PC. It contains a wide range of tests, from CPU benchmarks through to memory bandwidth tests, and allows us to see the exact strengths and weaknesses of a given piece of hardware.

## Unreal Tournament 2003:

We use [H]ardOCP's v2.1 UT2K3 benchmark application to test CPUs, motherboard/memory and video cards. For motherboard/memory and CPU testing we use the CPU setting, at 640 x 480 resolution, to remove the video card as a bottleneck in the system. However, for video card testing, we crank up the resolution to 1024 x 768 and above, to give the video card a thorough workout. The final score is an average frame rate of every test in the benchmark.

## Quake 3:

The most widely used gaming benchmark in the world, Quake 3's built-in benchmarking feature makes it simple to test CPUs, motherboard/memory and video cards. To test CPUs and motherboard/memory, all texture details are set to minimum at a resolution of 640 x 480, with the highest level of polygon detail. For video card testing, everything is set to maximum quality, at a variety of resolutions.

## 3DMark2001SE:

Using the same engine as Max Payne, it's getting a little long in the tooth, but this benchmark is still a great yardstick for video card performance, although it doesn't test any DirectX 9 features. We use the default settings and a variety of resolutions for video card testing, while for CPU and motherboard/memory we use the D3D Software T&L renderer at a low resolution, to put these components under the most load.

## 3DMark03 v330:

Perhaps the most controversial benchmark currently in use, we'll be using the results of the first three tests instead of the combined score of all four game tests. This is because it's the fourth game test that seems to be causing the most trouble, as it uses pixel shaders that are great on ATI cards, but are slow on NVIDIA hardware.

## TEST BENCHES

PC PowerPlay will now be using standardised hardware for the majority of our hardware reviews. This means we'll be testing it on identical test benches (PCs) each month. Our main testing platform is based on the Intel Pentium 4 2.6C with the Radeon 9700 PRO as our test video card. We've also set up an AMD testbench for the testing of AMD hardware. These testbenches were selected based on the fact that all components are of the highest quality and reliability, and represent a mid range system.

## Intel Test Bench (x 2)

Intel Pentium 4 2.6C  
HIS RADEON 9700 PRO  
Corsair 2 x 256MB  
XMS3200LL DDR400  
Seagate Barracuda 7200.7  
160GB ATA100 Hard Drive  
ABIT IS7 865PE motherboard  
TOPOWER 470W PSU  
Mitsubishi Diamond View 2115e 21" monitor  
Microsoft multimedia keyboard and optical mouse  
Windows XP Professional

## AMD Test Bench (x 1)

AMD Athlon XP 2600+  
HIS RADEON 9700 PRO  
Corsair 2 x 256MB  
XMS3200LL DDR400  
Seagate Barracuda 7200.7  
160GB ATA100 Hard Drive  
ABIT NF7-S  
TOPOWER 470W PSU  
Mitsubishi Mitsubishi Diamond View 2115e 21" monitor  
Microsoft multimedia keyboard and optical mouse  
Windows XP Professional

Degrees  
Celsius





# THE BEAST



## In association with Altech Computers

What the hell? Three Beasts? Have we gone mad? Can we not make up our minds? Certainly it's neither of the above, but a recognition of a PC building technique that was once obscure and difficult, but has now become increasingly easier and accessible - **overclocking**. To this end, alongside The Beast we've created, The Mutant, an affordable machine that gives The Beast a run for its money, while costing a whole lot less money. The Mutant is more difficult to set up and may require a lot of tweaking, never mind detailed knowledge of the inner workings of the motherboard, but the results will be worth it. Observe...



## CPU, MEMORY AND MOTHERBOARD

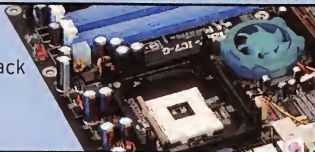
### Intel Pentium 4 3.2GHz 800MHz FSB

Still the fastest chip out of the box, seriously scaring everything from AMD. However, let's hope Intel doesn't rest on its laurels. Bring on 4GHz!  
\$1224 [www.intel.com](http://www.intel.com)



### Abit IC7-G 'Canterwood'

A hellra board in a hellra package that includes everything from an extra USB back plate to black rounded IDE cables. And it's powered by Canterwood - Serial ATA RAID goodness!  
\$385 [www.abit.com.tw](http://www.abit.com.tw)



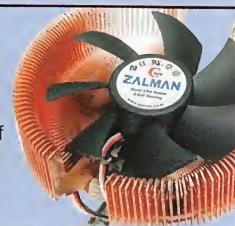
### 1GB Corsair TWINX-3700

A gigabyte of RAM for \$660. That is just crazy cheap, especially when the RAM in question is this blisteringly fast. The perfect complement to your Canterwood-based motherboard.  
\$660 [www.corsairmemory.com](http://www.corsairmemory.com)



### Zalman 7000-Cu

The Beast is so chunky, so wild and untameable that you need a real man's cooler stuck on the top of your mighty CPU. Zalman delivers, offering a chunk of metal that performs well and isn't too screamingly loud.  
\$75 [www.zalman.co.kr](http://www.zalman.co.kr)



### Antec TruePower 550W

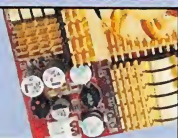
With 550 watts of blistering power you can plug in as many crazy case fans, cooling systems and front-mounted LCD panels as you like and still enjoy smooth, reliable gaming.  
\$240 [www.antec-inc.com](http://www.antec-inc.com)



## VIDEO, AUDIO AND CONNECTIVITY

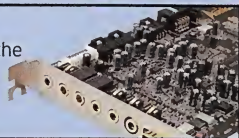
### Gigacube Radeon 9800 Pro 256MB

With more onboard memory than some people's whole PC, the 256MB version of the Radeon 9800 Pro will get your FSAA performance up and keep it up.  
\$930 [www.gigacube.com.tw](http://www.gigacube.com.tw)



### Creative Soundblaster Audigy 2

The most powerful consumer-level sound card on the market. Support for every sound format, including Dolby 6.1 surround.  
\$415 [australia.creative.com](http://australia.creative.com)



### Creative Inspire 6600 6.1

Let your sound card handle all the decoding and plug these cheap but powerful speakers into the ports on the back. An extra rear channel beefs your gaming surround!  
\$271 [australia.creative.com](http://australia.creative.com)



## STORAGE AND OPTICAL

### Sony DRU510A DVD +/- R/RW

Almost but not quite cheap enough for mere mortals to own, this Sony drive will burn DVDs and CDs at 4X and 24X respectively - tasty!  
\$680 [www.sony.com.au](http://www.sony.com.au)



### Samsung 816BRPS 16x DVD-ROM

It's straight up and down, it's cheap, it's fast, it works well and you need it to copy - sorry, back up - DVDs using your nifty writer.  
\$70 [www.samsung.com.au](http://www.samsung.com.au)



### 2x Seagate 120GB Serial ATA in RAID 0

Thanks to the IC7-G's support for Serial ATA RAID, you can run your 120GB in super-fast RAID 0 mode for even quicker load times - and to be damn cool too, of course.  
\$512 [www.seagate.com](http://www.seagate.com)



## DISPLAY, INPUT AND COSMETICS

### 21" Sony FD Trinitron G520

Until large LCD catches up with small LCD the Beast will stick with dependable, mature, established CRT. And the G520 is one of the best in the business.  
\$1960 [www.sony.com.au](http://www.sony.com.au)



### Antec PlusView 100AMG

It may not be the Rolls Royce of cases but it's roomy, has a built-in side window and it has all of Antec's various quick access features. Take note, Lian-Li.  
\$176 [www.antec-inc.com](http://www.antec-inc.com)



### Logitech Elite Black

Smooth mechanism, funky styling and support for both PS/2 and USB make this keyboard the right choice. Real men use ergonomic keyboards though, don't forget.  
\$88 [www.logitech.com](http://www.logitech.com)



### Microsoft Optical WheelMouse

For gaming you need USB, you need dependable, you need a slim form-factor and you need ambidextrousness. This baby wins on all counts.  
\$33 [www.microsoft.com](http://www.microsoft.com)



## BEAST VALUE:

## APPROX \$7719

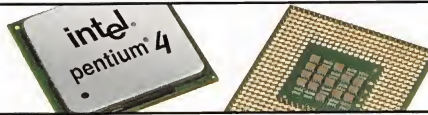


# THE MUTANT

Thanks to the popularity of overclocking and tweaking, we've included this machine to show you exactly what you can get away with for not much outlay. Tweaked to within an inch of its life, this is the machine we DO own, versus The Beast, which is the machine we'd like to be able to AFFORD to own.

## Intel P4 2.4GHz "C" at 3.3GHz

Truly the most overclockable of all modern CPUs, the 2.4C can be run a staggering 900MHz over its stock speed. Now that's value.  
\$334 [www.intel.com](http://www.intel.com)



## Abit IS7 'Springdale'

Yes, it's the cut-down version of The Beast's IC7-G, but it's still well beefy enough to support a furious thrashing and your extra fast running CPU. Springdale is like Canterwood without all the fancy extras.  
\$229 [www.abit.com.tw](http://www.abit.com.tw)



## Corsair Hydrocool 200

Perhaps a bit of an extravagance considering the P4 2.4C can run perfectly well overclocked under an air cooler, but hey, water is fun and this setup is easy to install and reliable. Who knows, you might even be able to squeeze out some extra juice...  
\$550 [www.corsairmemory.com](http://www.corsairmemory.com)



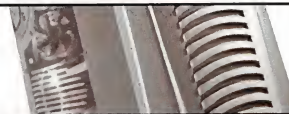
## Antec TrueControl 550W

What could be groovier than a PSU that comes with a 5.25" front plate with dials and knobs for controlling fan speed plastered all over it? Nothing, that's what.  
\$257 [www.antec-inc.com](http://www.antec-inc.com)



## Antec PlusView 1000AMG

What's good enough for The Beast is good enough for The Mutant, especially where the price is right. And with this machine, you'll definitely make the most of the side window.  
\$176 [www.antec-inc.com](http://www.antec-inc.com)



## 512MB Corsair TWINX-3200LL

Ah, the half-gig sweet spot, is there nothing finer? This RAM is beefy enough to support a bit of tweaking, so perhaps you can drag a little extra performance out of it?  
\$286 [www.corsairmemory.com](http://www.corsairmemory.com)



## PowerColor Radeon 9700 Pro

Amusingly, the video card is the single most expensive component of The Mutant. Radeon 9700 gives most of the performance of the 9800 Pro, and using the Omega drivers you can unlock extra performance. Overclock it, and who knows...  
\$627 [www.powercolor.com.tw](http://www.powercolor.com.tw)



## Zalman VGA Heatpipe Cooler 80C-HP

Bolt this mighty thing to your video card, attach the included fan, and who knows what insane core speeds you can achieve?  
\$70 [www.zalman.co.kr](http://www.zalman.co.kr)



## 120GB Seagate IDE

The first upgrade HDD I ever bought was 6GB and cost \$447. So this is pretty damn cheap. Only standard IDE, but at this price we can't complain.  
\$190 [www.seagate.com](http://www.seagate.com)



## Creative SB Audigy

Lacks a few of the features found on the Audigy 2, but only the ones that don't really have much effect on gaming. There's a lot of sound card here for not much cost.  
\$159 [australia.creative.com](http://australia.creative.com)



## Creative Inspire 6.1 6600

They're so cheap they're good enough for The Mutant, too. No decoder, no difficult optical inputs, just ordinary wires plugging in to a set of extraordinary speakers.  
\$271 [australia.creative.com](http://australia.creative.com)



## Samsung 816BPRS 16x DVD-ROM

Same as The Beast, this drive is fast, dependable and has a slightly funkier facade than most of the beige monstrosities currently available.  
\$70 [www.samsung.com.au](http://www.samsung.com.au)



## Samsung 252BRNS 52x24x52 CD-RW

Wow, these things sure got cheap didn't they? Burn CDs in hardly any time at all thanks to 52x writing. Backup all your digital LAN shots for posterity. Pose nude... no wait, don't.  
\$87 [www.samsung.com.au](http://www.samsung.com.au)



## 19" Samsung 995 Dynafat

Cheaper than the video card but still a lot of sleek, flat monitor. Nineteen inches is pretty much the minimum for decent gaming, and we can't wait until a 16ms LCD this big costs this much.  
\$628 [www.samsung.com.au](http://www.samsung.com.au)



## 4x Antec USB Light Sticks

Pep up The Mutant with a few light sticks. Stick 'em on the monitor, in the case, wherever you like. USB powered and respond to sound - clap on, clap off! Other cosmetic additions to The Mutant are limited only by your imagination...  
\$144 [www.antec-inc.com](http://www.antec-inc.com)



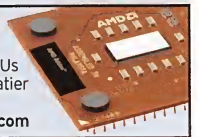
**MUTANT VALUE: \$4078**

# the beastie

The cheapest but worthiest PC of all, The Beastie is for all of use who need gaming, the web and to generally have fun without worrying about overclocking or our bank account.

## AMD -Athon XP 2500+ Barton

The cheapest CPUs keep getting meatier and meatier.  
\$165 [www.amd.com](http://www.amd.com)



## Abit NF7-S

nForce2 is good and this implementation of it is even better.  
\$187 [www.abit.com.tw](http://www.abit.com.tw)



## Antec Lanboy

Includes a 350W power supply, window and carry strap.  
\$190 [www.antec-inc.com](http://www.antec-inc.com)



## 512MB Corsair PC-3200

A budget PC with half a gig of RAM. All praise the open market.  
\$197 [www.corsairmemory.com](http://www.corsairmemory.com)



## Gigacube Radeon 9200

Not DirectX 9 capable, but still damn chunky for the classics.  
\$165 [www.gigacube.com.tw](http://www.gigacube.com.tw)



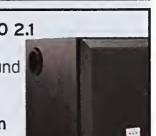
## 60GB Seagate IDE

Plenty of room for not much cash. Dependable and reliable.  
\$154 [www.seagate.com](http://www.seagate.com)



## Creative Inspire 2400 2.1

Plug 'em in to the nForce2's onboard sound and it's MP3-tastic!  
\$90 [australia.creative.com](http://australia.creative.com)



## Samsung 816BPRS 16x DVD-ROM

Good enough for all the PCs on this page, swift and reliable.  
\$70 [www.samsung.com.au](http://www.samsung.com.au)



## Samsung 252BRNS 52x24x52 CD-RW

Cheap, fast, reliable, what more could you want from a CD-RW?  
\$87 [www.samsung.com.au](http://www.samsung.com.au)



## 17" Samsung SyncMaster 753S

To think flat screen 17" monitors were once worth \$800. I love the future.  
\$280 [www.samsung.com.au](http://www.samsung.com.au)



## KME Wireless Keyboard and Mouse

A sleek combo, wire free for mad ranting around the room after losing at CS.  
\$80 [www.kmepc.com](http://www.kmepc.com)



**beastie value: \$1665**

So, you want one of these three fine beasts? Luckily, all of these critters are available at Altech Computers

[www.altech.com.au](http://www.altech.com.au)  
02 9735 5655





# SETUP



WRITE TO SETUP AT:

Setup  
PC Powerplay  
78 Renwick St  
Redfern  
NSW 2016

setup@pcpowerplay.com.au

## INITIALISING RAID

**Q** I have a GA-7VAXP mobo with 40GB and 8GB disks. I'm actually not all that fazed about using RAID, but my mobo always tries to initialise it on start up and it is annoying. As far as I could tell, it might not be possible for me to use RAID with my current disks, so if this is correct, could you at least try and tell me a way to stop it from initialising?

Nick

**A** Okee doke, RAID 0 implements a striped disk array where the data is broken down into blocks and each block is written to a separate disk drive. In/Out performance is greatly improved by spreading the I/O load across multiple channels and drives and best performance is achieved when the data is striped across multiple controllers with only one drive per controller. No parity calculation overhead is involved, it's a very simple design and easy to implement. It's not a "true" RAID because it is NOT fault-tolerant and the failure of just one drive will result in all data in that array being lost. RAID 1 provides 100% redundancy of data, which means that no rebuild is necessary in case of a disk failure, just a copy to the replacement disk. Although it's 100% inefficient, it is a useful option for real world use. Due to cost and other overheads, the remaining RAID configurations are just out of our league. What may be worth your while is to connect JABODs, or Just A Bunch Of Disks, which can be different sizes, in single striped arrays. This is achieved by building the array for each disk singularly

and separately in the exact configuration required and then placing all the disks back in for a final reboot. It's an easy way to add more disks freeing up the secondary IDE for older optical drives.

## MOH: ALLIED ASSAULT

I have fallen for Medal of Honor: Allied Assault on the Net. I have a P3-600 on a DFI CA61 mobo with a VIA Apollo Pro and 128MB of RAM. I had a Matrox G400, which was a great card for 2D but now useless for 3D. So, I upgraded to an NVIDIA MX440 and at first things seemed much better as the frame rates went up enough to play at higher settings. But after a driver update, a trial of DirectX 9 and adding another 128MB of RAM things slowed down badly. I made a recovery point so I removed the DX9 and the RAM as it became unstable. I also tried 3DMark 2001SE and only get 1702 (about Futuremark, I should be getting around 2664, which is 150% faster than my old machine. Anything obvious I'm missing? Or is the Apollo chipset just not up to it? I have also recently got ADSL and pings are goodish, but the frame rates drop up-close to below 20fps on any setting, so I STILL get slaughtered.

Phil

This is the only Socket 370 board with the VIA 693A/596B chipset from DFI, which says a lot. I know DFI is cheap because I have an Intel 815EP CS60-EC, but the Apollo Pro implementation in the CA61 was a bit crook. I'd upgrade the BIOS for a start: with the latest BIOS (and PCB Revision A or B1) you solve a problem with UDMA66 cables and UDMA33 devices, provide recognition of ATA100 disks, as well



as fixing DIMM 3 support for sticks of 256MB. I'd also try at the swap-meets for a P3-733EB, P3-750 or P3-850. Your memory issue could be related to brand or type - it must all be PC133 or PC100 and the memory bus set appropriately to 100MHz or to 133MHz - it could also be faulty. Among the jumpers to check are JP7, which allows the choice of Cyrix, or Intel processors. Also check JP2/JP4, which permits one to choose between 66MHz-100MHz and 133MHz as the FSB frequency. The thing I just can't understand is how such an old motherboard running an AGP 2.0 video adaptor - this should not be possible! Depending on vendor implementation, it may well be running at the correct voltage, but then again, it may not be and is possibly the cause of all your evil. Update your VIA 4in1 chipset drivers, as well, because the performance of the video adaptor is tied to the chipset.

(attenuates) modem signals. In addition, the wires have capacitance and inductance, which increases attenuation of the high frequencies needed by later model modems. The degree of loss of signal is a function of the total length of wire between the two modems, the distance from you to your exchange plus the distance from your service provider to their exchange, since both sections of the circuit add attenuation. The digital path between most modern exchanges also adds a fixed loss, but that in itself does not prevent fast 56K modem connections. 56K modems, which actually connect at something like 48000bps on anything but absolutely perfect lines, incorporate a concept of gradual degradation, meaning they can test the phone line and fall back to slower speeds if the line cannot handle the modem's fastest speed. Modems vary a lot in their ability to cope with the weaker



## CABLE TALK

After some investigation with four mates, we think download speed is related to our distance from the exchange. We all use dialup and the same ISP as there is only one exchange in the small country town we call home. Does the distance from the exchange make any difference? And does this same theory apply to other cables like CAT5 cable?

Matthew Sorokoput

Copper telephone lines have electrical resistance which reduces





signals that you get with longer lines so neither make, nor price, is a guide to a good modem. The same theory does apply to other cables and the standards employed to carry digital or analogue signals. If you're thinking of running CAT5 for Ethernet between mates' places, there's a practical limit of about 100 metres.

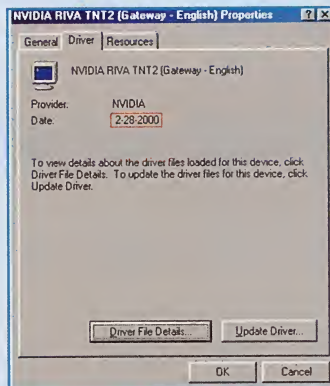
## POOR INSTALLATION

I have a Leadtek Winfast GeForce2 MX MAX videocard, a Vesta VMBO-204 VIA Apollo Pro motherboard with Win2K Pro. The problem is, I have downloaded the 44.03 NVIDIA

that does not have a digital certificate for Win2K. I installed the drivers anyway and when Windows could not find a valid WHQL certificate, I clicked "yes". Games work fine, until you reset or turn on the computer and I get a Blue Screen Of Death. The only option is to reset the computer and pray it won't come up again. After about eight or so resets, Windows will load fine.

Hanz\_Moleman

I run a multiboot PC that includes Win2K Pro. The NVIDIA drivers have worked for ages and through the various service packs for me. The problem you describe is caused by a poor installation and you should: uninstall the driver set via the Control Panel Add/Remove Programs. Remove the adaptor via Hardware/Device Manager and then reboot. Click "No" or "Cancel" until you get back to the desktop. Install Version 44.03 with the release date of May 14, 2003 and it should all go well. Update your VIA 4in1 chipset drivers, as well, because the performance of the video adaptor is tied to the chipset.



## FREELANCER SETUP

I have a problem with Freelancer setup. It runs fine to 98% and then an error box says that "Setup failed to extract files from D:\Cab2.CAB" due to a low disk space for swapping files, but I have 7GB of free space; what the hell is going on? I have tried to install it about 10 times, now the demo ran fine and even at medium to high it ran smoothly on my 8 MB on-board video.

PS: I have only been reading you mag since the beginning of 2002 and I want to know who is "ed" I see popping up in your mag.

Anon

There are two likely cause for the aborted installation: your swap or paging file is, in fact, too small for the installer to unwrap all of the setup files. It may be fixed to a specific size or Windows could be reporting incorrect free space and not allowing the swap file to grow as required. More likely and not infrequently, a .CAB file error is caused by a corrupt file on the CD. The "ed" that you speak of is short for "Editor" and is the one responsible for my late nights, tight deadlines and unspeakable acts of editorial menace: he's also the guy that runs the magazine.

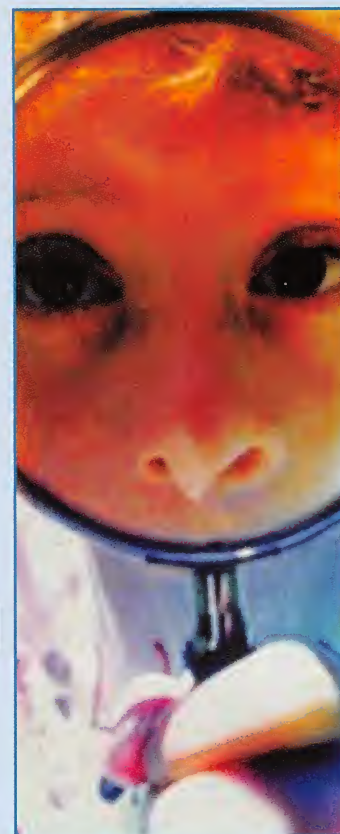
## MISSING GIGABYTES

I have a 80GB disk with a partition for C:\ of 5GB. Of the remaining 69.6GB, after uninstalling a few things and installing some new games, I noticed 5GB of space has disappeared and this has happened before. Last time it was up to 10GB

(a format fixed this), but I don't want to go through that again. I have defragged and used Norton Utilities, but how can I get my lost space back?

Gwilym

Misreported free space is an issue for FAT and NTFS formatted drives alike, particularly after deleting very large or many, many files. In WinXP and Win2K, a refresh in the Disk Manager can usually fix this or a check for errors on the offending partition. At worst, a CHKDISK at boot up should fix it. I've found Norton Utilities to be of more nuisance value than anything else and the last version I used rewrote my File Allocation Table on boot up over a period of four hours to destroy the file system. Uninstall NU and correct the free space problem with a disk check and you may well never have the problem arise again.



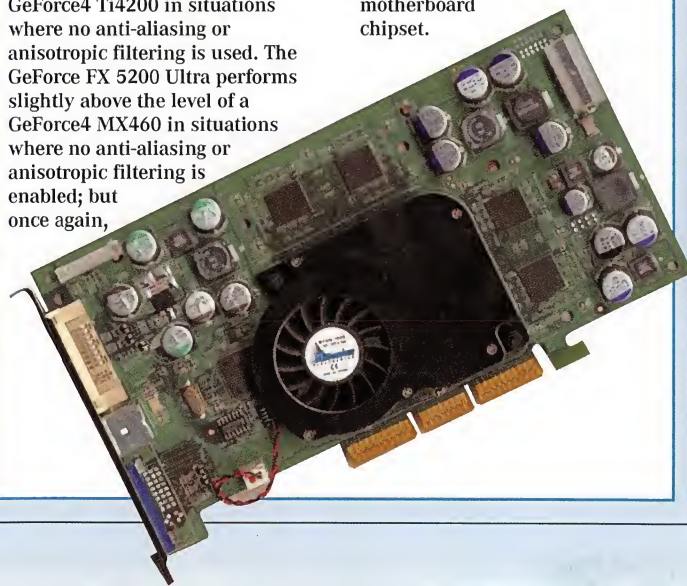
## CAN IT RUN A GEFORCEFX?

I have a P4-2.4GHz PC and a GeForce4 MX, so I need more grunt. Many graphics cards now support AGP8X like the GeForce FX series. Unfortunately, technology is advancing at a stupidly fast rate and my motherboard only supports AGP4X. I know that AGP8X provides a performance increase, but exactly how much? If I bought a GeForce FX, would I be able to run it? If I were able to run it, how would its performance be affected?

Gaz

It depends on the support offered by your motherboard. Note that AGP 3.0 and AGP8X are not synonymous since AGP 3.0 also supports AGP 4X mode. The 8X standard includes a 1.5V keyed Universal Connector and 0.8V signalling. If your motherboard provides AGP 2.0 1.5V signalling instead, you'll want the adaptor. The consensus among graphics freaks is that the GeForce FX 5600 Ultra performs much like a GeForce4 Ti4200 in situations where no anti-aliasing or anisotropic filtering is used. The GeForce FX 5200 Ultra performs slightly above the level of a GeForce4 MX460 in situations where no anti-aliasing or anisotropic filtering is enabled; but once again,

enabling those features causes the FX 5200 Ultra to perform more like a GeForce4 Ti4200 than a GeForce4 MX. The AGP 3.0 bus is entirely (forward and backward) compatible with cards of the previous version (AGP 2.0) and can work in 2x and 4x modes in the 2.0 standard and in 4x and 8X modes in the extended 3.0 standard. So, new cards which comply with the AGP8X specification will be compatible with motherboards with AGP 2x, 4x and 8X, and new AGP8X boards will support cards with 2x and 4x provided that they comply with the AGP 2.0 or 3.0 specification. An AGP8X video adaptor will do nothing more than run at AGP4X 2.0 in an older board, if allowed, and perhaps provide support for advanced DirectX 3D trickery. Backwards compatibility from 8X to 4X (AGP2.0) also depends on vendor implementation of the graphics chipset as well as the motherboard chipset.

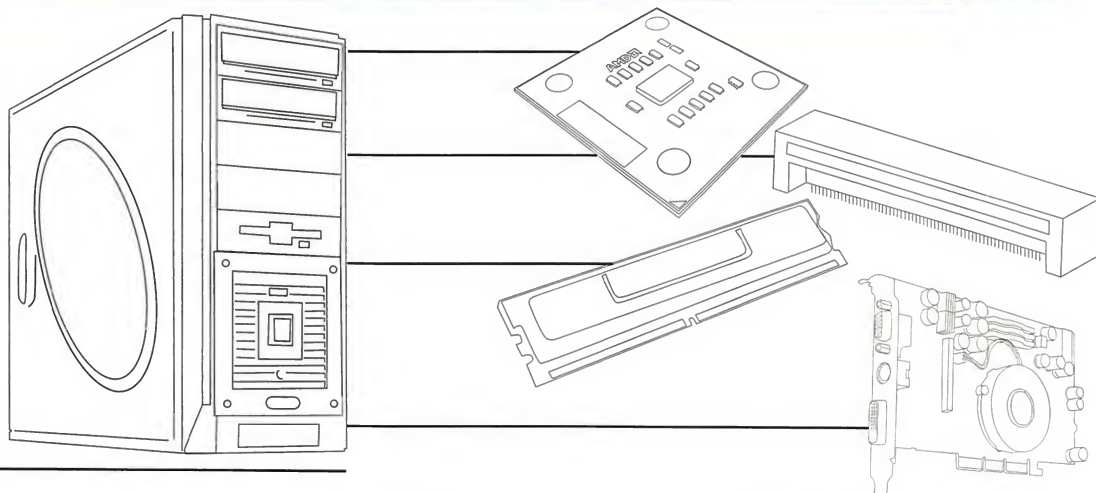




Asher Moses

# Jargon Buster

**A**lthough PC PowerPlay endeavours to provide thorough explanations of technical terms and jargons used in our reviews, this is sometimes a near impossible task when we have a 600 word limit per page. In an attempt to rectify this, allow us to introduce the latest section to grace the hallowed pages of PCPP, Jargon Buster, which will cover a new topic each month. Our virgin journey starts with graphics cards, which, quite obviously, have the ability to make or break any gaming rig. Without further ado, let the games begin (excuse the pun)!



## AGP (Accelerated Graphics Port):

Originally introduced by Intel, the AGP bus was designed primarily to boost the amount of bandwidth fed into the video card, and operates independently to the PCI bus, which was previously used to interface with older video cards. There are numerous speed ratings, and the most recent, AGP 8X, allows for transfer rates of up to 2.2GB/sec.

**ANTI-ALIASING:** Notice any jagged edges on objects whilst gaming lately? Well, this is because all digital images are made up of numerous square pixels, and the 'stair-casing' effect that results is called aliasing. Thus, anti-aliasing is the process of removing these jagged edges (aka: jaggies) by modifying the pixels along the edges of the line so they are varying shades of grey or in-between colour. The end result makes the edge appear smoother. There are numerous levels of anti-aliasing - the higher you go, the better your image quality will be, albeit with an increasing performance hit.

## ANISOTROPIC FILTERING:

Anisotropic filtering is an advanced form of texture filtering that helps prevent blurring and aliasing of objects as they move into the distance. Think of the scrolling text that introduces Star Wars films - this would be an ideal application for anisotropic filtering - if the technology was around at the time.

**APERTURE SIZE:** The amount of main memory that can be shared with AGP cards if onboard memory isn't sufficient. This can be adjusted in the BIOS.

**API (Application Program Interface):** Put simply, an API translates an application before passing it to the Operating System (OS). In terms of graphics and 3D cards, APIs allow a standard codebase (think of it as a language)

for developers to program their games around, ensuring full compatibility with 3D cards and the OS, and also allowing 3D chipset manufacturers to optimise their products to run more efficiently on different APIs. Although many APIs have by now faded away (i.e. Glide and PowerSGL), the two main ones in use today are DirectX (developed by Microsoft and found within DirectX) and OpenGL (created by Silicon Graphics and pioneered by id Software). DirectX3D seems to be taking over as the API of choice, with OpenGL on the verge of extinction.

**BUMP MAPPING:** This technique simulates rough or smooth textures (i.e. mountains/hills) by altering the brightness of pixels in specific patterns, giving the illusion of 'bumps'. For example, most water effects, such as ripples in a pond, are created by adding bump mapping to a horizontal plane.

**COLOUR DEPTH:** The number of distinct colours that can be represented per pixel, also known as 'bit depth'. For example, in True Colour mode (24-bit), there can be  $2^{24}$  or 16.7 million colours, while in High Colour mode (16-bit) there can be  $2^{16}$  or 65,000 colours.

**COMPOSITE:** An ageing video signal standard used for video in/out on many graphics cards in VCR and DVD players. It combines colour, brightness and synchronisation information into a single 'composite' signal. This has since been phased out by S-Video due to its relatively less than perfect image quality.

## DVI (Digital Visual Interface):

DVI is used by many digital flat panel monitors, and will slowly replace VGA due to its ability to accommodate both analog and digital monitors without having to convert analog, as is the case with digital monitors.

**ENGINE:** The base code that drives a game. For example, games such as Return to Castle Wolfenstein use the Quake 3 engine. The word engine is also often used as a fancy way of describing graphics chipsets (e.g. The GeForce FX Engine).

**FAST WIRES:** Enabled via the BIOS, fast writes allows data to be transferred directly between your CPU and video card, bypassing system memory and, thus, eliminating bottlenecks.

**FILL RATE:** Usually measured in millions of pixels per second, the fill rate is the speed at which pixels are rendered onto your monitor. Higher fill rates lead to better performance at higher resolutions.

**GPU:** The Graphic Processing Unit, also known as a Video Processing unit. This is the chip that does all of the work on the video card, and is mounted beneath the video card's heatsink.

## HIDDEN SURFACE REMOVAL:

The ability for video cards to render textures only when they are visible on screen and greatly reducing wasted bandwidth. It's called called HyperZ by ATI and Lightspeed Memory Architecture by Nvidia. This is necessary, as the video card actually calculates an entire scene, not just what is visible to the user.

**LIGHTING EFFECTS:** You may have noticed frequent use of the term 'lighting effects'. This refers to the brightening of certain pixels in order to simulate real world environments. There are many different types of lighting effects, including radiosity, specular and volumetric.

**MEMORY BANDWIDTH:** The amount of data that is able to be transferred in a specified time period between the graphics processor and the graphic card's on board memory (i.e. 30Gb/sec).

**MEMORY INTERFACE:** The amount of data that can be accessed in a single clock cycle. The wider the bus, the greater the amount of data (e.g. 128-bit is faster than 64-bit).

**MOTION BLUR:** By blurring objects, developers are able to give the illusion of high speed motion.

**PIXEL:** The smallest unit of display on a monitor, pixels are the tiny dots that make up the image you view.

**PIXEL SHADERS:** Shaders allow for the manipulation of individual pixels, allowing developers to add fine details such as hair and other life-like features to their models.

**REFRESH RATE:** The rate at which the image on your monitor is drawn on the screen (e.g. 85Hz means the image is redrawn 85 times per second). Lower refresh rates often result in flickering. Not to mention nausea and headaches. Accept 75MHz as a bare minimum, but you should probably aim for 85Hz or better.

**RESOLUTION:** The number of pixels displayed on a monitor, often including the number of colours. For example, a resolution of 800x600 means that there are 800 horizontal pixels and 600 vertical pixels.

**S-VIDEO (Super Video):** The new and improved version of composite, S-Video transmits data as two channels, colour and brightness, and results in a crisper more detailed image.

**VERTEX SHADERS:** Vertex shaders are responsible for calculating the geometry (polygons) of a scene. Programmable vertex shaders allow developers to add unique effects to a scene with minimal CPU usage.



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# VIRUS WATCH



With Stuart and Andrew Calvin

## PE\_BUGBEAR.B

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 sweet sweet relief...

### Not at all cute and fluffy

**Q** On the 7 June our PC got some suspiciously strange emails from both people we don't know and people we do know. Our friends denied sending these emails, but we certainly did get them. We use an old antivirus program that was bundled with a CD-ROM some years ago and we use Internet Explorer and Outlook Express version 6 on Windows XP. We know that most, if not all, of these emails would have been viruses, but why aren't we infected? We did delete them, but we wonder if they were viruses did we send any to our friends?

David Zee

**Q** Man, oh man! You won't believe coincidence and my bad luck. I have to study a bit of statistics at uni and was waiting for a copy of a paper I needed (hehe). I told the guy to put 'Stats' in the subject box so I could easily sort it from all the spam. The email arrives, no message body (don't need one since it was just meant to be an old assignment) and not from the person I know. Recently, I suspected there might have been a virus sitting in my inbox, so I used an online scanning engine that found "PE\_BUGBEAR.B". The upshot is that I very quickly installed an antivirus package and upgraded from Internet Explorer version 5.5.

kROz

**A** Both of these letters were dated shortly after the discovery of PE\_BUGBEAR.B on 4/5 June 2003, so it wasn't hard to put two and two together. PE\_BUGBEAR.B is a file infecting variant of WORM\_BUGBEAR.A. This variant includes all the functionality of the previous malware with the addition of a file infection routine. It infects a large number of files on affected computers and the attacker can run code of their choice. This worm is a bit of shocker because of its backdoor capability, so I hope kROz has changed all of his passwords, as well, while David need only worry about installing new AV software. PE\_BUGBEAR.B is difficult to recognise, as it doesn't display any warnings or messages indicating that it has infected a computer. When spreading across shared network drives, PE\_BUGBEAR.B doesn't check if the directories it's copying itself to are shared printers. Therefore, if it copies itself to one of these directories, the printer can start printing junk characters.

### It came from nowhere... where do you get it?

This memory-resident worm arrives, as usual, as an attachment in email. The systems affected are Windows 95, 98, ME, NT, 2000 and XP. It copies itself to the start folder and dozens of other places to ensure its longevity. Besides exploiting a



## PC-cillin TOP 10

These ones are going around. Keep an eye for them and make sure you're protected:

- 1. PE\_PARITE.A**  
Non-destructive File Infector Virus: Infects .EXE and .SCR files to increase their size.
- 2. WORM\_KLEZ.H**  
Destructive worm: A mass-mailer that propagates via email.
- 3. PE\_ELKERN.D**  
Non-destructive File Infector: Infects .EXE and .SCR files for propagation.
- 4. WORM\_KWBOT.C**  
Non-destructive worm: Encrypted and memory-resident it steals system information.
- 5. VBS\_REDLOF.A**  
Destructive Visual Basic script: Deletes Files and overwrites the startup file.
- 6. VBS\_LOVELETTR.AS**  
Non-destructive Visual Basic script: runs hoax files in Internet Explorer.
- 7. PE\_HANTANER.A**  
Non-destructive file infector: Infects .EXE files in the KaZaA and the Internet Explorer download folder.
- 8. PE\_CIH.1003**  
Destructive file infector: Corrupts the Hard Disk and destroys FLASH BIOS.
- 9. PE\_SPACES.1445**  
Destructive file infector: Modifies the Master Boot Record and prevents the system booting correctly.
- 10. PE\_DUPATOR.1503**  
Non-destructive file infector: Increases the size of executable and screensaver files.



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**Did you say Payload?**

Payload refers to an action that a virus performs on the infected computer. This can be something relatively harmless like displaying messages or ejecting the CD drive, or something destructive like deleting the entire hard drive. A Worm is similar to a Virus, but it differs in that all it does is make copies of itself (or part of itself). A Trojan, strictly speaking, is not a virus, although it's often thought of as such. Really, they are programs that enter computers in a number of ways and carry out actions that enable them to take control of the affected computer. Malware is short for Malicious Software.

vulnerability in Internet Explorer, the provocative file attachment names just seem to be too hard to ignore! It seems the world will end if that "\$150 Free Bonus!" attachment just isn't clicked...

**What does it do???**

It's very easy to become infected by this worm, as it can be automatically activated when the message is viewed through Outlook's preview pane. It does this by exploiting a vulnerability in Internet Explorer (unpatched versions 5.01 and 5.5), which allows e-mail attachments to run automatically. The problem is the "MIME" thing you may keep hearing about or, in full, "Incorrect MIME Header Can Cause IE to Execute E-mail Attachment". This vulnerability exploit is also known as



Exploit/iFrame. PE\_BUGBEAR.B can send out a file containing a copy of the cached passwords of the dial-up connection to networks to a certain list of e-mail addresses. It infects a large number of files. It disables security programs. It opens port 1080, which allows hackers to gain remote access to the affected computer. It logs the keystrokes in a file. By doing this, hackers that accessed this file would be able to obtain confidential data, such as passwords for accessing certain Internet services, bank accounts and so on. The key-logger information is sent when the data saved exceeds 25,000 bytes or every two hours. PE\_BUGBEAR.B is a polymorphic

worm, which makes it difficult for antivirus programs to detect.

**Antivirus Software Retaliation**

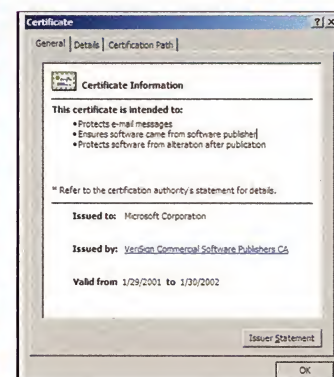
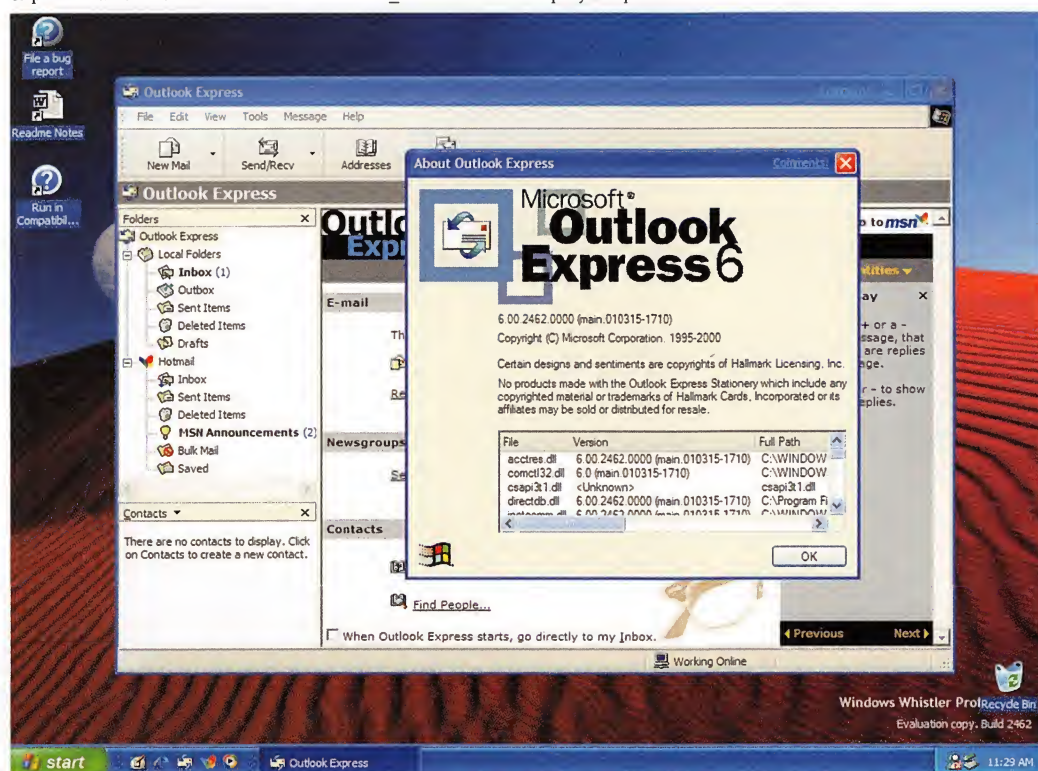
This worm creates another thread to terminate several antivirus and monitoring programs. It searches the active process list to terminate the target processes and suspends its thread execution by sleeping for a certain time interval (which is not more than 20 seconds), then continues with the monitoring and killing of the processes from popular AV programs. The worm can prevent your AV program from working properly and you may not aware of this!

**Prevention is better than Cure!**

Infections from Worms like BUGBEAR are entirely preventable. In early 2001, Microsoft published Security Bulletin (MS01-020) outlining the vulnerability, mitigating factors and a fix. In essence, if you run a version of Internet Explorer prior to version 5.01, you will always be vulnerable. If you use Internet Explorer versions 5.01 or 5.5 you will always be vulnerable unless you apply the fix. However, Internet Explorer 5.01 Service Pack 2 is not affected. Upgrading to an unaffected Internet Explorer version can also eliminate the vulnerability. However, as discussed in MS Knowledge Base article Q308411, users who upgrade to Internet Explorer version 6 on Windows 95, 98, 98SE or ME must select either "Typical Install" (this is the default) or "Full Install" in order to eliminate the vulnerability.

**What's the antidote?**

There are instructions for an online and manual removal on most AV sites, however, as usual, the latest pattern file should be downloaded and installed before anything else is attempted. The patch for Internet Explorer is available via Knowledge Base Article Q290108 or Security Bulletin MS01-020. ([www.microsoft.com/windows/ie/download/critical/Q290108/default.asp](http://www.microsoft.com/windows/ie/download/critical/Q290108/default.asp))





# MOD OF THE MONTH: Enemy Territory FOR: RETURN TO CASTLE WOLFENSTEIN

For: Return to Castle Wolfenstein ■ Version: 1.0 ■ Size: 271MB ■ Rating: 4/5 ■ URL: [www.ausgamers.com/files/details/html/6569](http://www.ausgamers.com/files/details/html/6569)



If only all officially dumped games could turn out like this - great looking fast multiplayer action with all of the goodness of Return To Castle Wolfenstein for the wonderful price tag of nothing. After canning the singleplayer project due to constantly falling behind schedule and a host of other problems, Activision and id promised the hungry gaming public they would

game played online (however, by the time you're reading this it will definitely have dropped down in the ranks). Before anyone writes in and complains, we know Enemy Territory isn't a mod. We just think the free nature of the game makes including it in modlife appropriate.

Featuring six maps and numerous small tweaks to the already strong Wolfenstein

release the multiplayer component of the expansion pack as a standalone product. Good to their word, Enemy Territory has been released and as expected has been gobbled up by the hungry masses - in fact, it's currently the fifth most popular

multiplayer, Enemy territory is worth the time downloading, even at a hefty 270MB. The fact it's a standalone product, not requiring players to own a copy of RTCW, makes Enemy Territory all the more appealing and somewhat surprising when all things and the almighty dollar is considered. Throwing Activision and id's altruism aside, Enemy Territory is an excellent example of a fairly straightforward online shooter with the emphasis firmly placed on fast action and teamwork. Each side (Axis and Allies) has five classes to choose from ranging from your standard soldier through to medics, engineers and special ops. Each character is capable of levelling up in a quasi-RPG fashion through the accumulation of XP, gained through achieving

objectives, helping teammates and fragging the enemy. As players gain XP they are granted access to special, class specific powers and abilities. At higher levels of experience, soldiers can perform an adrenaline boost to move faster without as much stamina drain and also reload faster, whereas medics can heal more damage. To stop players from becoming too powerful and making the game inaccessible to newcomers, player XP only lasts for as long as the campaign lasts - once the three maps have been played it's back to square one. The only real complaint with gameplay that bunny hopping doesn't seem to have any effect on stamina. A word of advice to any bunny hopper out there - stop, it's cheap and looks stupid.

Each of the six maps for Enemy Territory features are really quite large and feature a number of objectives. Whilst it would have been nice to see another three or four maps in the initial release the size of the maps guarantees that you won't be mastering them too easily.

The netcode for Enemy Territory is good and stable with very infrequent dropouts. There are heaps of local servers, so you shouldn't have any trouble at all finding a game to join. The game runs silky smooth with a broadband connection (expect pings around 30), but it's still very playable under dialup. Although Enemy Territory has its share of problems it is an excellent example of a readily accessible online shooter. With any luck, the success of America's Army and Return to Castle Wolfenstein: Enemy Territory will prompt other gaming companies to either create their own free game or to release some of their unfinished projects as free downloads.





# REALGTA 3

For: GTA 3 ■ Version: N/A ■ Size: 107MB ■ Rating: 5/5 ■ URL: [www.doupal.cz/realgta/download.htm](http://www.doupal.cz/realgta/download.htm)



**R**ather than just a single mod, RealGTA3 is a collection of GTA3 mods from around the world adding elements of realism, as well as real world places and vehicles to the highly popular game. Aside from the 50+ staggeringly beautiful new vehicles, RealGTA3 features a number of new textures designed to make the game far more attractive - sick of the blank rock textures making all of the cliffs look like fairly dull greyish mounds of rock? Well, never fear, they now look like sandstone. Generic billboards have been replaced with real world advertisements for popular brands such as AMD, Pepsi and McDonalds and a number of real shops have been placed around Liberty City, including

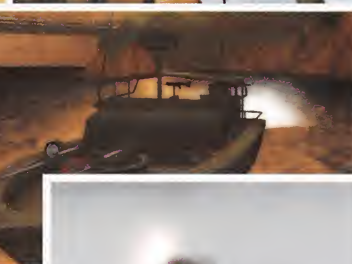
Shell service stations, the Coca Cola factory and even an IKEA (it is a European mod after all).

A few new areas have been added to Liberty City that, whilst not changing gameplay too much, do add a lot of extra flavour. The most obvious addition to Liberty City is the Statue of Liberty, accessible only by boat. It's an excellent bit of modelling and the lookout at the top of the statue makes for an excellent snipers nest if you're looking to do a bit of wanton killing. A new bridge has also been added that links the hideout to the Francis International Airport - just the thing for those quick getaways. A slight gameplay tweak also allows players to go anywhere in a boat rather than being channelled into certain areas. The more you play RealGTA3 the more you discover. Check it out for yourself and like the wonder of GTA3 again.



# EVE OF DESTRUCTION

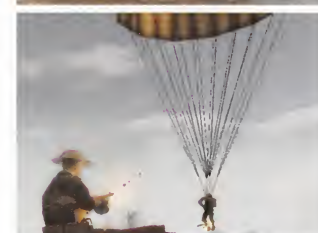
For: Battlefield 1942 ■ Version: 1.0 ■ Size: 181.5MB ■ Rating: 3.5/5



**W**ow, now that Vietnam is no longer such a sore topic with the US, games based on the messy 'police action' are popping up all over the place. So far, we've had Line of Sight: Vietnam, Vietcong and there are more in the works. It's no surprise that modders are trying their hand at making Vietnam based mods. If they're all as good as Eve of Destruction we have a lot to look forward to. Even at early Alpha stage (Eve of Destruction is only about 12% complete) the mod is already looking incredibly polished. As

could be expected the mod replaces all vehicles, weapons, skins and terrain with those fitting the Vietnam/Indochina conflict, so you can expect to fly around in a Mig 17 and Huey helicopter or take a jeep for a spin. At this current stage of development only a few of the final vehicles and weapons have been implemented. In fact, the French and Russian armies have yet to be coded. You can expect to be seeing a lot more of this mod in future. The new terrain textures look

absolutely brilliant, really evoking the feel of a damp and foreboding jungle. The only real complaint that can be levelled at Eve of Destruction at this current point of development is that it makes the already system intensive Battlefield 1942 even more system intensive. It will be interesting to see how the development of the mod will effect the development of Battlefield: Vietnam, the upcoming sequel(ish) to Battlefield 1942 as both the game and the mod sound very similar in concept.





# INTERVIEW

## REALGTA3

This month we had the pleasure of speaking to 16-year old Petr Doupal, author/compiler of the RealGTA3 mod. Please note, that due to a language barrier between English and Czech, some of Petr's comments have been paraphrased.

**PCPP:** GTA3 is not the most realistic game in the world - what inspired you to create the mod in the first place?

**PETR:** It's relative to rate the realism of the game. Some things are realistic, some not. But the main thing I didn't like was the cars - they were great, but they weren't real! So, I wanted to change it and since I enjoyed GTA3 so much, I was inspired to make RealGTA3.

**PCPP:** What is your intention for the mod?

**PETR:** I aimed to make GTA3 more realistic. In RGTA3, everything I have dreamed about is there - all cars are replaced by new real world ones (except some special cars), all billboards and poster are real, many buildings now belong to real companies.

Thinking more on the question, I can say that my second intention was to prove that I could achieve something big, even if I'm only 16 years old! I've become quite well known now respected - and you know that GTA says, "Respect is everything". I'm still at school, so in terms of what I want to do after graduation, I want to work for a game magazine either on the Internet or on paper, or in a game developing company, such as Rockstar Games. So I hope the reputation gained from RGTA3 will help me.

**PCPP:** How long did it take to create the finished mod?

**PETR:** I got the idea in October. Within a few weeks I created the first version of RGTA3 - only for my friends. They were really satisfied with the result, so I decided to create RGTA3 much more seriously and it was ready for its first public version on 31 January this year. It was really successful (and I was very surprised and happy), and three weeks later, after collecting suggestions and a long list of bugs, I released fixed version 1.1. This stayed online for three months and now I'm working on RGTA3 to be perfect.

I want to make a point about downloading. My web hosting provider had ordered me to remove RGTA from my website because it figured out that if RGTA stays on their server, they will get 8TB (8000GB) downloads every month.

Fortunately, I've got eight mirrors, so it's not problem to download it. RGTA3 took me nine long months and that's the reason why my school marks suffered so much. But my priority at the time was modding, so I'm not that sad about the school results.

**PCPP:** How did you go about developing the mod? What editor/compiler did you use and how did you design the model?

**PETR:** I should firstly point out that I'm not the guy who created the car models - other authors did it. They used ZModeler, which allows you to create models for GTA3 and for many other games - every car takes few weeks to create, so I really hold the authors of RGTA3 cars in high esteem. It's funny that I didn't make any of the cars for RGTA3, but it's really hard and I also didn't have enough time to make them.

My function was to compile, modify and create my own mods. I used Paint Shop to paint/edit textures, IMG Tool and TXD Tool to import/export models or textures into the game, GXT Editor to change game texts (e.g. names of cars) and Notepad for editing game files. I couldn't accomplish RGTA without the assistance of WinAmp.



**PETR:** A month ago I told my friends, "If I would want to make Real Vice City, please stop me at all costs!" Guess what? I'm preparing to start work on my total car conversion for VC - but it won't be called Real Vice City because there will be new cars. It will be Unreal Vice City... but that name is really stupid, so I have to invent a new name. Or if anyone has a good name for it, please contact me.

Oh, and I forgot to mention I want to make a little update for RGTA3, but I will only change a few cars. Watch <http://realgta.net/>!

**PCPP:** Any advice for our budding modders out there?

**PETR:** Never give up! Modding is hard work and even if you don't profit from it, it's a great feeling to make some modification for any game! Just try to edit some textures and if you had fun with it, try something harder. Modding is unlimited - and the worst thing you can do is to lose patience. I can't believe I had enough patience to work nine months on RGTA3. And ignore those idiots who speak badly about your mod - they are envious because they can't do what you're doing. And last advice: be imaginative! You can't create anything if you can't imagine how it will look when it's finished!

I'd also like to say thanks to Daniel and PC PowerPlay as this is my first interview and I really enjoyed it. :-)

Message to readers: Hi guys, I hope all of you have RGTA3 installed, and if not, go to <http://realgta.net> immediately!!! And hope you all have a nice summer!

There were five phases in developing every version: 1. Gather mods - I watched many GTA3 sites everyday to look for new mods - I waited three months since version 1.1 to collect enough mods for RGTA3!

2. Gather suggestions and ideas from players and make list of bugs from previous version.

3. Create RGTA3 on Notepad and in my head - to write/imagine which real car will replace a classic GTA car, which mod I will use, etc.

4. Create RGTA3 - to compile all mods into one big piece.

5. Test the new version. Testing of RGTA3 took two weeks - my brother and I played the whole game twice without finding a bug or error - so it should be perfect.

**PCPP:** Did you run into any difficulties making the mod?

**PETR:** Yes, I did. The hardest part of making RGTA3 was to fit all the cars perfectly into classic GTA3. GTA3 has 60 cars and their replacements couldn't mess up the game. I spent a few weeks creating combinations of cars and the product is the RealGTA3 Final car pack. I've got to say that GTA3 engine has got some limitations and some annoying attributes, which made RGTA3 development harder than I expected. **PCPP:** Do you have any other mods in the works?





# GARAGE GAMES

Into the unknown with George Soropos

## REINER KNIZIA'S SAMURAI

Developer: Klear Games URL: [www.klear.com/samurai/index.php](http://www.klear.com/samurai/index.php)



As part of our ongoing mission to bring you the best games the indie scene has to offer, this month we look at Reiner Knizia's Samurai and talk to David Adams the 'President' of Klear Games. Samurai is a turn-based strategy single and multiplayer game set in pre-unification Japan whose objective is gaining sovereignty over the country by securing influence over three feudal castes. Samurai is an adaptation of a board game of the same name and while the computer game design and interface elements are new, the fundamental game play rules and strategy are true to the original.

Feudal Japan is divided into hexes with cities and towns having combinations of resources that can be grabbed by each player. The player who can exert the most influence on a town captures it and adds its goodies to their overall strength. The demo of Samurai includes a very useful tutorial that gets you up and running quickly, explaining everything you need to play.

The game has won the award for Technical Excellence at the Independent Games Festival 2003 and the fellas at Klear Games are pleased with the accolade. Klear Games is based in Dallas, Texas, and is made up of just four people: David Adams, Darcy Brown, Charles Brown and Walker Hale IV. Samurai is Klear Games' first title and for a small team looking to reduce development time and costs, the choice of a turn based strategy game is a good decision.

However, it isn't the kind of game likely to attract interest from publishers, so why take the risk?

Adams spoke on behalf of the team at Klear Games and acknowledged the apathy from publishers. "We did recognise publishers have become extremely reluctant to work with studios without one or more published titles under their belt," he said. "And while we think Samurai is a compelling game, we still know it is not a 'AAA' game able to compete against mass market titles. So, going the independent route seemed the most direct way of doing what we wanted to do."

The definition of "mass market title" has changed a lot over the years, so what does Adams think of the emerging dominance of 3D action/interactive movie genres at the expense of nearly all other genres in the industry?

Adams replied, "Well, that is a tough one. I think the gaming industry mirrors all other forms of mass media entertainment. Companies are focused on profits more than artistic freedom/expression. In and of itself that doesn't preclude alternate genres and innovation from evolving, but it does tend to doubly reinforce the use of 'proven' genres and intellectual property (can anyone say 'X2' or 'T3?'). With the increased sophistication and decreased costs of advanced engines and development

tools, independents have access to many of the same capabilities as the pros. However, I will say that the route of full-time independent developers is REALLY tough. But I can see a burgeoning group of creative, part-time game developers as a potential safety valve towards preventing a descending spiral of monotony and stagnation in mainstream game development."

The spiral Adams mentioned has of late come down even further, which brings us to the question of whether consoles, such as PS2 and Xbox, have affected PC game development for good or for worse.

Adams thought this over and replied, "I think consoles fill an extremely valuable role in game development, given that they provide a consistent, known platform to target for mass market game development. Therefore, instead of PCs stagnating or regressing, they have evolved to become the domain of companies looking to take advantage of the rapid pace of hardware innovation, such as id and Valve. Also, independent PC game developers don't have access to the console market given obvious impediments towards executing and distributing console games that people can't download and load into their PlayStation 2."

Given the limits associated with indie game development, Adams points out this does not make it any less a commitment when deciding to develop a game. Not only does there need to be a team with like-minded people with diverse skills and a shared resolution to produce a game, but also thorough preparation combined with determination. "When getting your first game out, make sure you have adequate reserves of cash if you're going full-time, or if you're going part-time spend 30-40 hours a week," said Adams. "Prepare for a lot of long design meetings, grueling hours of development and personal conflict before your first product sees the light of day!"

On a cheery note, we were curious as to what games Adams, who has in the past been described as an avid gamer, plays. Adams reminisced and said, "I loved those arcade Capcom and Namco fighters and still relish the 54-hit combos! I

was addicted to Quake, Quake2, Quake3 and Half-Life, which consumed much of my PC time where I dished out punishment to co-workers and many unsuspecting online opponents (Muwahahaaa!). Currently, I'm stuck on Soldier of Fortune 2, although I'm really trying to graduate to Medal of Honor or Battlefield 1942!"

The Klear Games lads are currently hard at work on a major update of the game, which will be available on their site in the first week of August.







# FLASHBACK

Games and tech remembered with Anthony Fordham

## SPACE HULK

**Developer:** Electronic Arts  
**Genre:** Squad-based realtime strategy  
**Graphics Mode:** VGA, 256 colours, 640x480  
**Sound:** 8 bit digital effects  
**True 3D:** No  
**Operating System:** DOS 5.0  
**Released:** 1993

**S**cary games on the PC are few and far between. You've got your System Shock 2 and the marine campaign of your AvP and AvP2, but little else. Yet all these games owe more than a slight debt of gratitude to Space Hulk, where sprites and 8-bit sound nevertheless were expertly combined to create a claustrophobic, tense and above all frightening experience.

Based on a Games Workshop spinoff from their massively successful Warhammer 40,000 tabletop game

system, Space Hulk was originally a board game that pitted plucky Space Marines against the evil Genestealers. They were called Genestealers because they shamelessly ripped off the Aliens of the movies of the same name.

The board game was fun, with little miniatures and cardboard doors and configurable maps, but hardly very frightening. Combine the mechanics of the table top game with the best visuals 1993 could offer, pulsing dreadful music and slaving 8-bit sound, and playing Space Hulk with the lights off

became a different matter entirely.

Ancient ships appear drifting in Human space. The Marines are sent to investigate the various different chapters in competition to clear the most hulks. Inside, empty corridors and dormant machines belie the horrors about to leap down your throat. Find a choke point. Set up your four-man squad. Here come the Genestealers. The guns shred them easily, but there are more and more. Then someone's gun jams. Someone else runs out of ammo. Everything goes pear shaped. Fast reactions and quick thinking don't survive the adrenalin-rush of pure horror. No one makes it out alive.

Not bad for a game that barely had animation, let alone the fancy pseudo 3D graphics of Doom. Sure, like many games of its generation it got a little boring after a while and the controls were less than intuitive, but we take that kind of thing for granted today on games that don't even have a core design this good. A worthy classic.



### WHY SPACE HULK DESERVES TO BE REMEMBERED

- n Genuinely frightening
- n Showed that design will always beat flashy technology
- n One of the few decent Warhammer 40,000 games
- n Slaving demons thirsting for human flesh!

## FLASHBACK TECH

### P6SBA INTEL 440BX MOBO

**Manufacturer:** SuperMicro  
**Significance:** First motherboard to resemble our current systems. Second-generation AGP, excellent stability and support for the flashy new Pentium 3.  
**Cost:** \$258  
**Released:** 1998

**T**here's nothing like a motherboard to inspire excitement in the general population. No really, think about it. The P6SBA was the backbone of my first Pentium 3 machine running at a respectable 450MHz and flinging polygons with abandon thanks to a Diamond Viper 770 TNT2 Ultra video card.

Reading the documentation on the board, it's funny to think that as little as five years ago (less actually, since the P6SBA was released at the end of 1998) manufacturers were making a big deal about an amazing new

technology called AGP, which "reduces contention between the CPU and I/O devices by broadening the bandwidth of graphics to memory" and "offers a quantum-leap improvement in 3D graphics performance with far richer texture content!"

Marketing guff you'd be right to think, but the machine that I built around a P6SBA was indeed a quantum leap over my Matrox Millennium and Orchid Voodoo2 powered Pentium MMX 233MHz.

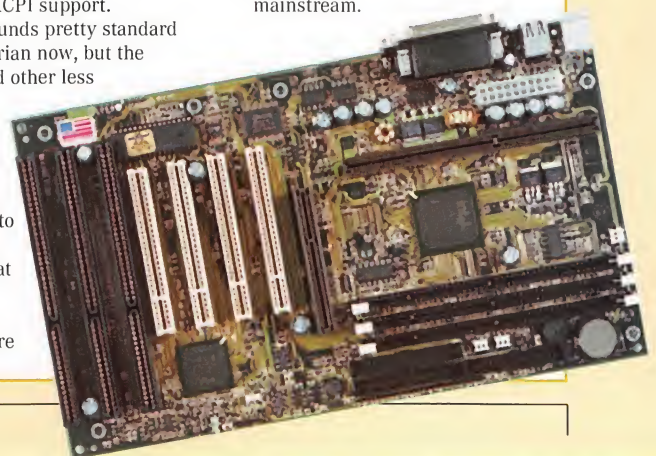
The Intel 440BX chipset was definitely one of the greats of the 20th Century. It was Intel's

second-generation AGP chipset so the new graphics interface was nicely matured. Intel paved the way for a proud history of crazy feature names by including Quad Port Acceleration, boosting the system's frontside bus from 66MHz to 100MHz, and providing support for Ultra DMA mode 2 hard drives over ATA/66. It also ran 100MHz SDRAM and was able to be used in mobile systems thanks to ACPI support.

It all sounds pretty standard and pedestrian now, but the P6SBA (and other less successful Intel 440BX boards) were some of the first to include features that we would recognise today. Before

the P6SBA, motherboards were just plain weird, ancient chunks of runic silicon with hand-etched tracks around which data would crawl, slowly and painfully to be meticulously processed by passively-cooled \$2500 chips now selling as keychain ornaments.

The future began in 1998, and it began with the P6SBA. Quake 3 blew my mind. And at last PC gaming started to go properly mainstream.





# THE DISC

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**T**his month is special; we have a bucketload of so much awesome stuff for you guys. First of all, check out the super realistic America's Army: Operations in Spotlight. It may have been created as a recruiting tool for the U.S. Army, but its attention to detail is second to none. Also, we have the latest E3 trailers for you to drool over, in particular Halo 2. NO MORE Animatrix.

This month, we have a total of fourteen great demos for you in our Demos section. To start off, we have the riotous adventures of Caleb, the fast paced action of the IndyCar Series, the ass-kicking Charlie's Angel: Angel X, and many more.

The Mods Plus section includes some rockin' stuff, including the second full alpha release of Eve of Destruction. Also included this month, we have the Final Real GTA3, Merciless 1942 v4.0 and a heap more!

The Bunker is as big and bad as ever; Patches features V 1.4 of Battlefield 1942; Utilities has the Complete Online Gaming System and Adobe Acrobat 6. Finally, I would like to say a big THANK YOU to Paul Noone. He made my transition into this exciting new position as smooth and comfortable as possible. Hope to see you next time!

**Paul Noone - Disc Master/  
Amos Hong - Disc Apprentice**  
[cdgod@next.com.au](mailto:cdgod@next.com.au)

## DVD CONTENTS



### SPOTLIGHT/ MOVIES

America's Army 1.7 FULL GAME

### TRAILERS

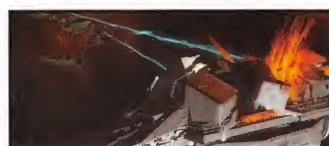
Anachronox ep. 6  
More E3  
BF1942: Secret Weapons  
Halo 2  
Medal of Honour: RS  
Vampire: the Masquerade

### DEMOS

Caleb's Drunken Adventure



**Devastation**  
Heaven & Hell  
Indy Car Series  
Tron 2.0  
Smash Up Derby  
Charlie's Angels: Angel X  
Deep Sea Tycoon  
Next Generation Tennis 2003  
Neighbours From Hell  
Pure Pinball  
Chaser  
Galactic Civilizations  
Star Scape  
Steel Tide



### MODS

Battlecraft 1942 Beta v1.0  
Eve of Destruction  
GTA:Vice City Radio Station  
Rocket Arena 3 v1.65 [Quake3]  
Battlecraft 1942 Mesh Samples  
Desert Combat 0.38d [BF:1942]  
Real GTA3 Final  
Merciless 1942 Addon v4.0  
Uncrossable Parallel: Green Berets beta v1.0

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BF: 1942 v1.31 - v1.4 Patch  
Day of Defeat v1.0 Mod Fix  
Rise of Nations Update v1.02  
Raven Shield v1.3 Patch  
Battlefield: 1942 v1.4 Patch  
**ROM'S BUNKER**  
Wallpaper, free games, Winamp skins, map packs and addon files.

### UTILITIES

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Abandon Loader  
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Adobe Acrobat Reader 6.0  
Advanced Zip Repair 1.6  
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G Spot 2.2  
Ostat v0.31 (build 240 rel 4)  
PC-cillin 2003  
PowerPoint Viewer 97 8.0  
VDM Sound 2.0.4

## DISC VIRUS SCANNING

All files on CD PowerPlay and DVD PowerPlay are scanned with PC-Cillin 2003. For more information please visit: [www.manac.com.au/VirusCheck](http://www.manac.com.au/VirusCheck)







# REVENGE OF THE NERDS

Because Freon makes the world go round

**W**hen someone buzzes my parent's trendy top floor Balmain waterfront apartment at four in the morning and slurs unintelligibly into the mike for six minutes about why I should let him in, I immediately know it's the Guerrilla Gamer.

On this occasion, he staggered out of the lift, drunk of course, and started going on and on about this new concept he'd come up with for his latest column - ungamers. As he was rummaging through my near-empty pantry trying to find some kind of liquor other than Frangelico, he explained that ungamers are those guys who spend all their time tweaking, boosting and configuring their PC to return the fastest possible benchmark result. They are all about games, and gaming performance, but they never actually play. I smiled and nodded and agreed this was a really important concept to have come up with, while enviously thinking of the boots tucked safely under my bed, slumbering away.

I eventually recalled a six pack of VB my crazy ex-third flatmate had left in the laundry last Christmas, and with it and a bit of deft negotiation eventually got the Guerrilla Gamer and his unfortunate personal hygiene out of my flat and back into the night.

Not without some sense of relief I headed back to bed, only to find the crazy ex-third flatmate in question breaking in at the balcony window.

"What the hell are you doing?" I demanded.

"You forgot to give me a key," he replied.

"I didn't FORGET to give you a key," I spat as I looked around for my teddy and my bed socks, "I specifically remembered NOT to give you a key. What do you want?"

"Oh man," said my crazy ex-third flatmate, "I have had the weirdest week. You know that new Deputy Editor they've got over at the mag and how he's really into tech and making us do all proper benchmarks and stuff now?"

Us? I wondered, still thinking of the Warcraft 3 playguide incident, the blacklisting and the editor's hatchet attack that had earned both him and my crazy ex-third flatmate a night in the soak tank down at Redfern police station.

"Well, he said since I don't really know anything about tech that I should check out this overclockers club and maybe learn some stuff from them," he went on.

"Yes, and?" I asked, walking through to the kitchen to get a cup of Milo, secure in the knowledge that once my crazy ex-third flatmate decided he wanted to tell me something he'd follow me to the ends of the earth to do so.

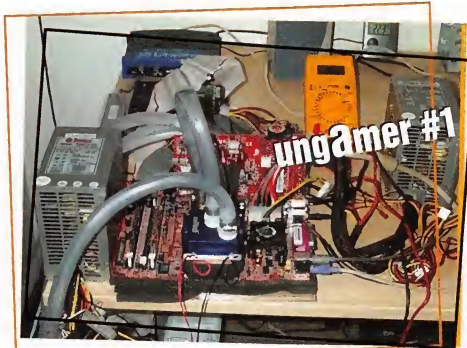
"Well, I went down to this club in Rockdale and, man, it was amazing! These guys are total freaks! They've got enough Freon in there to keep Walt Disney on ice for a century! They've got so many industrial fridge compressors it sounds like a convention for industrial fridge compressor designers!"

My crazy ex-third flatmate had always struggled with metaphor.

The microwave groaned and my mug rotated at the exact speed I would have liked to jam a metal ruler down my crazy ex-third flatmate's throat to shut him the hell up and let me get some sleep. I cursed the boots in their snug dry alcove, thrice cursed them.

"I got pictures!" he said, breathlessly. We retired to the genuine 70s style kitchenette eating nook with yellow vinyl bench cushions, and he spread out some grainy digital shots on the formica counter.

They were pretty scary, as you can see. I chose to look beyond the exciting black tubing to try and get a sense of the man behind each of these diabolical machines. I began to think that the Guerilla Gamer, in all his urine-soaked delirium, may have actually had a point about the ungamers.



UNGAMER #1

First up, when cooling gets extreme, you can obviously forget about cases. If you look at image 1 you can see this nut has carefully laid out his machine on the corner of his desk, so he can add in an extra power supply and that yellow thing with the dial and the LCD display that all those electronics nerds seem to carry around all the time.

This machine is kind of freaky, but loses big points because the pipes carrying coolant to the CPU aren't wrapped in thick black insulating foam, and it also looks like he's using some kind of sensible thermo-electric plate instead of just bathing the CPU in litres and litres of liquid nitrogen or Freon. Yeah, he's an ungamer, but is he the Witch King of Ungamers? Hardly.



UNGAMER #2

This guy is bit more hard core, although surprisingly shy about showing off the extent of his setup. Big, big points for the magnificently overblown and stupid-looking cooling block strapped to his mid-range CPU, including the fat insulation foam, the blue cable ties making it impossible to ever get off, and the big bit of perspex jutting into space for no good reason.

He's even liquid-cooling his northbridge, which is ace, although it's disappointing that given the resolution of the photo you can't tell if the white pipes are just white pipes or if actual ice has formed on them, which should give him crazy problems whenever he turns the thing off. And the black insulation snaking all over unnecessary parts of the motherboard? Priceless. And yet, the whole thing is still slightly too neat, almost as if he actually uses his PC for something other than overclocking.

UNGAMER #3

Now, we're getting somewhere. Why use nitrogen when you can use a plastic bucket full of green cordial and iceblocks? The best thing about this setup isn't the

abject filth, which is great since there's no sense of any kind of order at all in here, but the mental image I get of those unsecured pipes slowly snaking out of the bucket and spraying antifreeze all over this loon's precious pile of jerry-rigged componentry. I'd be pinning the Witch King badge of honour on this guy right away, were it not for the feeling that we can do slightly better...



UNGAMER #4

Behold! The demonic Witch King of the Ungamers! Surprised in his lair! The filth! The fat pipes! The gas bottles! The cans of compressed air! First up, observe in the left of the image that his machine is actually mounted on the wall, no doubt to keep it clear of the filth that pervades the rest of the room. Note also that despite the big black pipe over the CPU, he still needs an ordinary desk fan for added frostiness. Again, note also the PC under the desk near the gas bottles, which is in bits, and the rats nest of cables needing only a few common field mice to get into the house and put this insane set up out of commission permanently.

And finally, spot the third motherboard sitting on the desktop within easy reach of pudgy nerdy fingers too lazy to do real work and save up for a properly fast PC, but instead spending all their spare hours tweaking and prodding to squeeze a few extra pointless MHz out of his cut-price system. And yes, he uses a trackball, so he sure doesn't play games on this thing.

"Great," I said, after spending five minutes staring in horror at the photos, "another bizarre fetish to make me even more afraid of the Internet."

"Oh, they have whole site rings dedicated to this stuff," my crazy ex-third flatmate said as the clock chimed five, "but more importantly, do you think I could sleep in your bathtub? I think I forgot where I live again."



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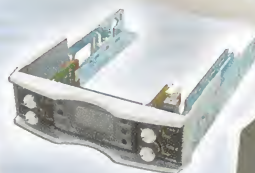
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